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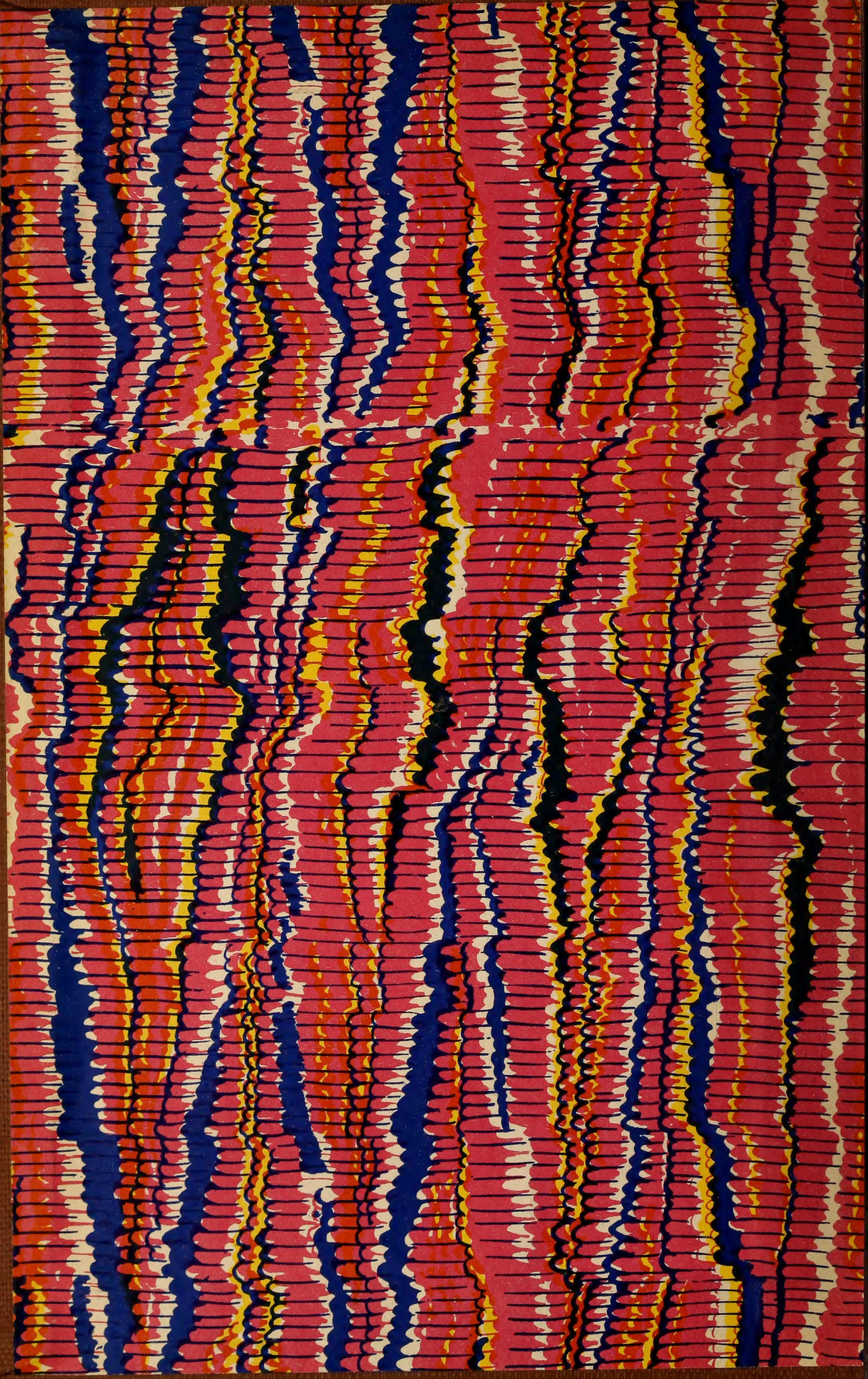

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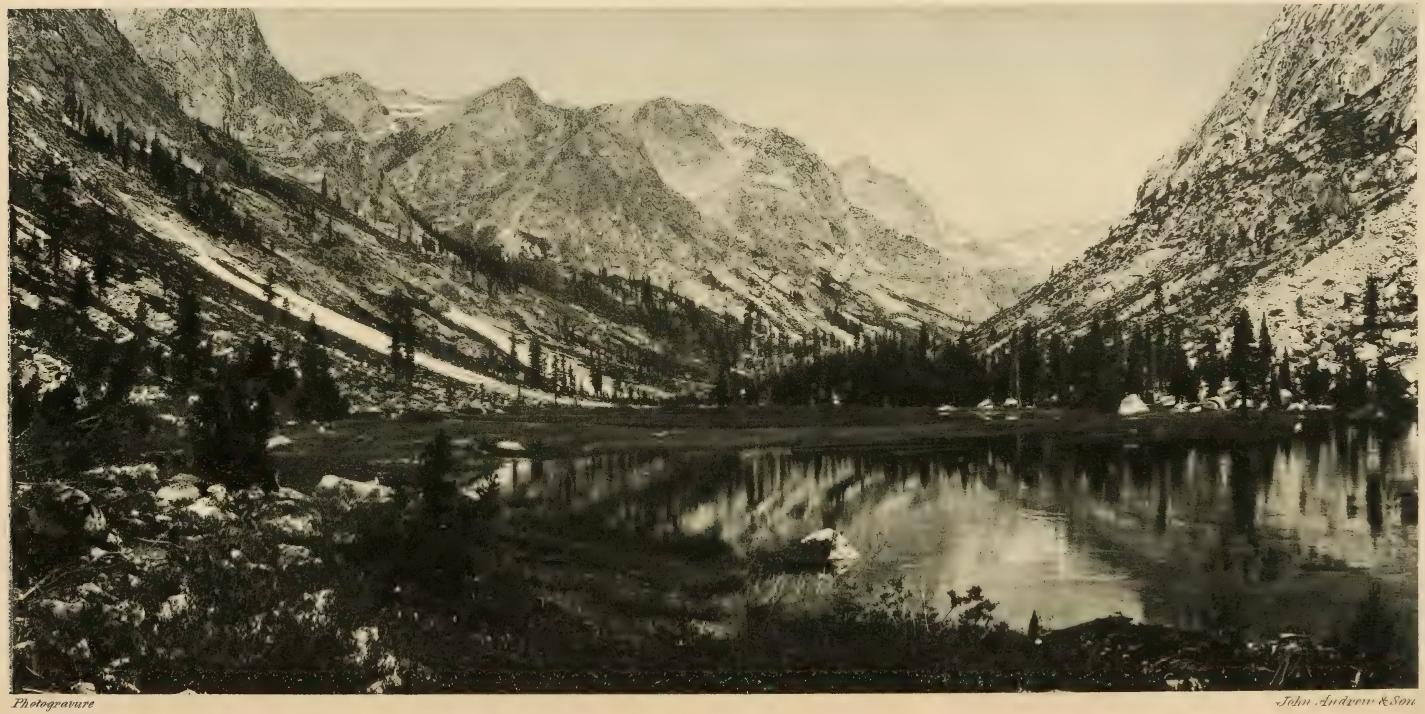
All communications intended for publication by the SIERRA CLUB, and all correspondence concerning such publication, should be addressed to the Editor, Elliott McAllister, Room 302 Mills Building, San Francisco, California.

Correspondence concerning the distribution and sale of the publications of the Club, and concerning its business generally, should be addressed to the Secretary of the Sierra Club, Room 302 Mills Building, San Francisco, California.



Photogravure

John Andrew & Son

GROUSE VALLEY, MIDDLE FORK OF KING'S RIVER.

SIERRA NEVADA MOUNTAINS.

SIERRA CLUB BULLETIN.

VOL. VII. SAN FRANCISCO, JANUARY, 1909. NO. 1

THE HIGH MOUNTAIN ROUTE BETWEEN YOSEMITE AND THE KING'S RIVER CAÑON.

BY JOSEPH N. LE CONTE.

The southern High Sierra is, from a scenic standpoint, the finest part of the range. As one passes southward from Mount Lyell, the Main Crest becomes progressively higher, the river cañons deeper, and the area above the timber line broader and more savagely sculptured, till the climax is reached at the head of King's River. To find a route through the entire length of this rugged region has been the ambition of many a lover of the High Sierra. Such a route, if practicable for pack animals, would furnish the most delightful outing imaginable, for it would show in a few weeks the entire length of the finest portion of the Main Crest, and place one within striking distance of all the great summits, including Lyell, Ritter, Red Slate, Abbott, Humphreys, Darwin, Goddard, the Palisades, Pinchot, Williamson, and Whitney, a distance of over one hundred miles in an air line.

The first who attempted an exploration of the southern High Sierra were Professor William H. Brewer and his assistants, of the California Geological Survey in 1864-65. Although they crossed some of the highest parts of the range, and succeeded in getting a very general idea of this great region, their work was largely reconnaissance, and not of a detailed nature.*

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* California Geological Survey, Vol. I, Geology, pp. 364-437.

Soon after, Mr. John Muir explored many of the upper cañons of the San Joaquin and King's rivers. His expeditions were made for the most part alone, and with a knapsack, but he made no attempt to work out an animal route through the higher portions.

Mr. Theodore Solomons was the first who started a clearly organized attack upon this unmapped region with the single object in view of finding a practicable animal route through it parallel with the crest line, and as near to it as possible. In 1892 he pushed southward from the Tuolumne Meadows alone, and made his way as far as the valley of Mono Creek, when lack of provisions forced him to return.*

In 1894, in company with Mr. Bierce, he worked still further, reaching the basin of Bear Creek. He climbed and named the Seven Gables, and was soon after forced by a heavy snow-storm to abandon his entire outfit, and make his escape on foot to the settlements near Pine Ridge.†

Again, in 1895, with Mr. Ernest Bonner, he explored the Recesses of Mono Creek, made his way up the San Joaquin, worked through the Evolution Group, ascended Mount Goddard, and, seeing from the summit of that dominating point the great difficulty of getting his animals farther south without much loss of time, again abandoned his outfit, and knapsacked it down the cañons of Disappearing and Goddard creeks to Simpson Meadow and the King's River Cañon.‡ By this means he made his way through, but did not find an animal route across the basin of King's River, and also avoided most of the high region at its head. We owe much to Mr. Solomons for his splendid work in this part of the High Sierra, and doubtless the problem of the "High Mountain Route" would have been solved long ago had he been able to give a few more years of his untiring energy to the search.

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* SIERRA CLUB BULLETIN, Vol. I, No. 3, p. 61.

† SIERRA CLUB BULLETIN, Vol. I, No. 6, p. 221.

‡ SIERRA CLUB BULLETIN, Vol. I, No. 7, "Notes and Correspondence," p. 287.

The writer's own interest in the region dates from 1898, when, together with Mr. C. L. Cory, he followed Mr. Solomons' route to Mount Goddard, and, finding the way blocked to the south, crossed the Goddard Divide at Hell-for-Sure Pass, and pioneered a way to Crown Valley, then to Tehipite, Simpson Meadow, and the King's River Cañon.* At the time this was the highest route by which animals had been taken from Yosemite to the King's River Cañon, and for ten years, or till the summer just passed, this record stood. During that time many others have passed over it: Dr. Fairbanks and party in 1901, Messrs. Pike and Symmes in 1902, and several others in 1903. The writer, with Mr. G. K. Gilbert, went over the identical route in 1904.† But it will be noticed that the southern part of the route avoids entirely the High Sierra at the very point where it is the most magnificent, and therefore it cannot be called the true High Mountain Route, but rather the Middle Route through the southern Sierra.

It was obviously useless in the short space of a summer's vacation to work through at once and without any previous knowledge a route in so rough and intricate a region as the head of King's River. Accordingly the writer took every opportunity after 1898 to work out bits of the route, and piece them together. In 1902 a trip was made across the Middle Fork of King's River to Split Mountain.‡ In 1903 the North Palisade was ascended, and a very fair idea of the entire Middle Fork basin obtained.§ In 1904 the Evolution Group and the Goddard Divide east of Mount Goddard were explored.|| In 1906, a party of the Sierra Club Outing passed up the south branch of Woods' Creek and crossed Glenn Pass, proving that portion to be practicable for animals.¶ Also, in 1906, the writer and party went up the north branch of Woods' Creek, and from the summit of

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* SIERRA CLUB BULLETIN, Vol. II, No. 5, p. 249.

† SIERRA CLUB BULLETIN, Vol. V, No. 3, p. 153.

‡ SIERRA CLUB BULLETIN, Vol. IV, No. 3, p. 177.

§ SIERRA CLUB BULLETIN, Vol. IV, No. 4, p. 253.

|| SIERRA CLUB BULLETIN, Vol. V, No. 3, p. 153.

¶ SIERRA CLUB BULLETIN, Vol. VI, No. 2, p. 100.

Mount Pinchot saw a pass to the northward leading to the head of the South Fork of King's River. Again, in 1906, we pushed up the Middle Fork of King's River to Grouse Valley, and showed conclusively that the upper cañon was impassable for animals. Finally, in 1907, George R. Davis and party, of the United States Geological Survey, took a pack train over the Goddard Divide at a time when the higher portions were covered with snow, and worked out of the Middle Fork Basin by Cartridge Creek. This closed the last important gap, and in 1908 the writer, with Mr. James Hutchinson and Mr. Duncan McDuffie, determined to attempt the through trip.

Roughly speaking, our plan was to start from the Tuolumne Meadows, cross Donohue Pass to Red's Meadow, thence to Fish Creek and over the Lone Indian trail to Mono Creek. We hoped to ascend Mount Abbott, and then take the regular trail to Bear Creek, cut across westerly to Blaney Meadows, and up the San Joaquin River and Evolution Creek to the Goddard Divide; thence down the Middle Fork of King's River to its confluence with Palisade Creek, up the latter and over the divide to Cartridge Creek. From this point the old sheep trail was to be made use of as far as the head of the South Fork of King's River, and the Pinchot Pass used to reach the source of Woods' Creek, which could then be followed to Glenn Pass and the head of Bubbs' Creek. Such was the route mapped out, though we hoped to make side trips from it, and if possible to follow some higher routes than the ones proposed.

In the following account I shall describe rather minutely the route pursued. I trust the reader will pardon this somewhat detailed description, remembering that it is written with a view to helping others follow our track through this wild region, rather than to give a narrative of the trip itself.

The start was made from Yosemite on the morning of July 1, 1908. Our outfit was packed on three of

Kanawyer's best mountain mules. The saddles were new and in perfect order, with new cinches, straps, and ropes throughout. Two packs were made up in heavy canvas and leather kayacks, and one, the kitchen outfit, in light but strong canvas-covered boxes. The packs at the start weighed about 175 pounds each. No saddle animals were used.

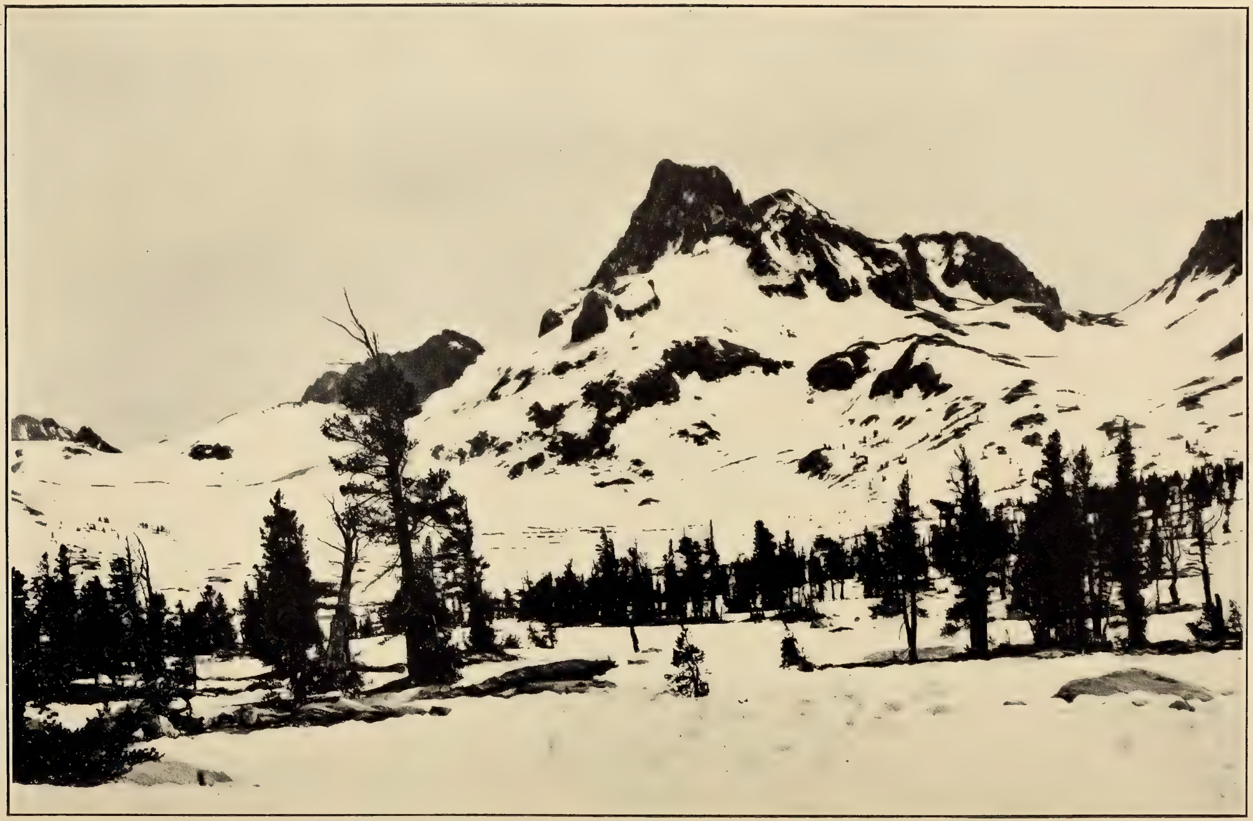
We took the Nevada Falls trail past Clouds Rest and camped the first night in a beautiful group of firs at the base of Sunrise Ridge. Next day found us on the familiar Sunrise trail, and by noon we were lunching at the old Sierra Club camp opposite Lambert's Dome. Here we remained till next morning, and then passed on up the Tuolumne Meadows to the base of Mount Lyell, and over the rough trail to the timber line, where noon of the third day found us camped at 9,600 feet near the base of Donohue Pass. We were obliged to stop over during the afternoon in order to take advantage of the hard snow on the summit in the early morning. The trail to Donohue Pass is rough in places, but it was comparatively free from snow by July 4, so we experienced no difficulty in reaching the top by 8:30 a. m., and our first pass was crossed at 11,200 feet. Descending into Rush Creek Basin on the Eastern Slope was bad, on account of soft snow. One of our mules broke through and had to be unpacked, but once at the bottom of the first steep jump-off, we got out of the snow, picked up the trail, and worked southward across Rush Creek. The views of Mount Ritter here were magnificent. I doubt if in the whole Sierra there is a more noble mountain than this, standing so high and clear-cut above everything around it, and so brilliantly contrasting black rock and snow. Wherever it is visible, Ritter fascinates the beholder.

The Main Crest was recrossed, and Thousand Island Lake reached by noon, and amid swarms of mosquitoes we searched for a refuge from their vicious attacks, but finally made camp on a peninsula in the lake, where a breeze off the water gave us comparative peace. In the afternoon some time was lost at the outlet of the lake on account of false monuments, and more time was lost further down the San Joaquin Cañon by missing the best trial. But at last the Agnew trail was found, and we made good time, reaching Agnew Meadow by 5:30, after a hard day's work.

The magnificent range of Mount Ritter and the Minarets does not lie upon the Main Crest, but on a spur embraced by two branches of the San Joaquin. The Main Crest lies to the east of that spur, and is relatively low and insignificant. It is largely forest covered, and Mammoth Pass, a few miles south, is the lowest pass in the southern Sierra. Our route in this part followed within a few miles of the crest line.

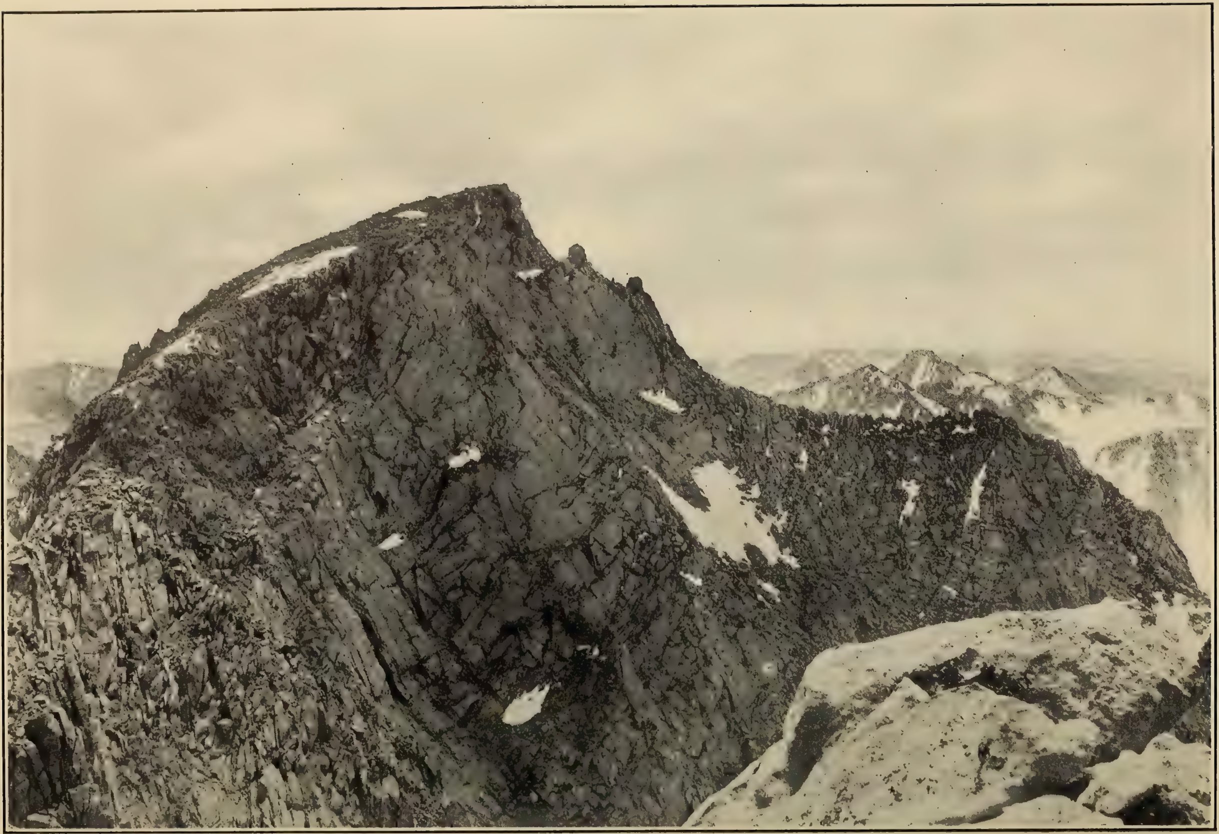
Mosquitoes at Agnew made life a misery, and we were glad to get off early next morning, and move on to Red's Meadow, where we found a respite from these little pests. We stopped there all day of the 5th, and enjoyed the luxury of a bath in the splendid hot spring. We also met miners and campers, and were enabled to send out letters for the last time. Red's Meadow is one of the most beautiful camping spots in the Sierra. The surrounding region is full of interest; Mount Ritter and the Minarets to the northwest, the wonderful basaltic mass of the Devil's Post Pile near by, the Rainbow Fall, the finest in the Sierra outside of Yosemite and Hetch-Hetchy, within a mile, and curious and interesting volcanic phenomena all about. Add to this the abundant fish in the streams, and what more enjoyable spot can be imagined?

Early on the morning of the 6th we were on the march, and took the Mammoth trail eastward to the summit of the pass, then struck off southward on the upper Fish Creek trail, and followed it to the brink of Fish Valley. Here the trail drops abruptly 2,000 feet into the deep valley, so we abandoned it, and for the first time struck off into the wilderness, with the idea of working down



MT. RITTER AND BANNER PEAK FROM ISLAND PASS.

From photograph by J. N. Le Conte, 1907.



THE SUMMIT OF MT. ABBOTT FROM THE NORTH.

From photograph by J. N. Le Conte, 1908.

into Fish Creek somewhere far above the valley proper. For a couple of miles we worked east along the brink of the cañon. Rough slopes forced us down the sides from time to time, and with great difficulty we got the mules down some rocky places covered with manzanita chaparral. After descending several bad places, it became evident that return was practically impossible, so we struck straight down that fearful slope through thick manzanita every step of the way, and over all sorts and sizes of boulders. It was unwise to risk our animals at the very outset, but once started down there was no help for it. By noon the bottom was reached, luckily without accident, and we lunched by a small rivulet at the edge of an aspen thicket. In the afternoon we forced our animals through the aspens toward the creek, and then cut the rest of the way to the stream with the ax. Luckily, the creek was fordable, and on the west bank we found an old sheep trail. This led directly up the creek, and by 6 p. m. we were in camp at the beautiful Peninsula Meadow, a perfect gem of a place.

Next morning we went on up the creek to the point where the Lone Indian trail leaves the main Fish Creek to climb out of the west side of the cañon. Here we unpacked, and taking a little lunch in the knapsack, went on up the main stream to look for a pass at its head. Evidences of an old sheep trail could be discerned from time to time, though the way was very rough. Several beautiful large meadows were passed, with steep rocky gorges between, till finally the cañon opened out into a large basin at the timber line, lake dotted and surrounded by towering peaks, among which were Red Slate and Red-and-White Peak. McDuffie and I stopped at the highest lake, and then returned, searching carefully for the best route down the cañon.

Hutchinson went on over the shoulder of Red-and-White Peak, still searching for a possible pass. On his return to camp that night he reported signs of an old sheep pass to the west of Red-and-White, but that it led toward the west into the cañon of the North Fork of Mono Creek, and not toward Mount Abbott and the head of the main Mono Creek, so we decided to use the Lone Indian trail, as first planned.

This was accordingly followed next morning, and after losing some time hunting out the trail near a large lake, we crossed the divide between Fish and Mono creeks by a good pass at about 11,500 feet. A fine, broad valley dotted with meadows and sprinkled with thin timber led away to the south. This we followed mile after mile, till about noon. Threatening thunderstorms delayed us after lunch, and while staking the animals the discovery was made that our creek pitched over a 1,000-foot cliff at the end of the meadow into a deep cañon below. The trail was soon found, climbing over a low ridge to the left, and then it led us by many windings and zig-zags down that tremendous cañon wall to a splendid green meadow below, where we made one of our most delightful camps at its lower end in a fine grove of tamarack pine.

We were now on the North Fork of Mono Creek, the same which we would have reached had we crossed the rough pass near Red-and-White Peak. A good trail was blazed down its east side to Mono Creek, where we struck into the main Mono trail early next morning. This we followed up Mono Creek till noon, finally camping in a wretched place near the mouth of the Third Recess. The country was overrun with cattle, and much overstocked. All the feed was eaten down to the roots, and our poor mules fared badly.

We intended to make a try at Mount Abbott next morning, and as the weather was threatening and as many cattle were about we put up our little tent to protect our outfit. After a hasty lunch we started up the creek with the intention of locating Mount Abbott, if possible. Two or three miles above camp the Fourth Recess was reached, a splendid, rocky gorge extending back into the very heart of the wildest mountains. Just within its gateway a sheer cliff 1,000 feet high stretched across the gorge from wall to wall, and over it the creek tumbled in a mass of snowy foam. As our trail climbed higher on the opposite slope of the main cañon we could look directly up the Recess to where a magnificent snowy peak towered at its head. This seemed the highest point about, and might be Mount Abbott, though its general form did not seem to be that of the Bear Creek giant as viewed from Red Slate and others. We soon passed the Fourth Recess and pushed on till about 4 p. m., when the crest of the Sierra was reached at the Mono Creek Pass, about 12,000 feet above sea level. Here Mount Abbott burst upon our delighted vision, towering in sheer cliffs high above the snowfields of the Eastern Slope,—absolutely inaccessible from that side. The peak at the head of the Fourth Recess was not in sight, and though quite certain now that it could not be the true Mount Abbott, we decided to ascend it first, to get a better idea of the country. So we descended to camp, and went to bed early, with a hard day behind us and a still harder one in prospect.

By daybreak of the 10th, we were marching up the cañon of Mono Creek with lunch, cameras, and rope. At the Fourth Recess we left the main stream and turned up the gorge to the south to a large lake at the base of the great cliff that blocked the mouth of the Recess. Though it was impossible to climb up alongside the falls, we managed by scrambling up the cañon wall to the right to get around the end of the cliff, and descend to the shelf at the top of the fall. Here the Recess opened out into a great amphitheatre at the base of our peak. The eastern side was walled in by the Main Crest,—a continuous cliff fringed with spires. The western side rose in jagged peaks striped with snow. The floor was covered with unbroken snowfields or frozen lakes, while the peak we were about to try rose high into the black-blue sky above a small residual glacier. We examined the front of the mountain with our field glasses, and decided upon a tongue of rock reaching down almost to the bergschrund of the glacier. Our route lay directly across the little glacier, an easy grade at first, but steeper and steeper as we ascended. The bergschrund was bridged at one point directly below the rock tongue, but above the crevasse the ice was so steep and hard as to necessitate step-cutting. We were ill-equipped for this sort of work, and therefore made the great mistake of changing our point of attack to a spur or cliff further to the right, which descended below the bergschrund. After considerable difficulty we got from the snow to this rock, and started slowly up. The climbing became more and more difficult. Sheer cliffs ahead forced us to the left again, but only to come up against the solid rock-front at last. We were obliged to retreat, and by constant use of the rope got back to the snow again above the crevasse. We tried it for awhile on the rocks near the edge of the main snow face, and after ascending some 300 or 400 feet were brought to a stop again. The cliffs at the head of the snowfield were too precipitous to attempt. So after wasting upwards of two hours of dangerous climbing on the rocks, we were finally forced to work straight across the steep, glassy snow slope to the tongue of rocks which we had originally chosen. The prospect of a slide down the snow was unpleasant, to say the least, on account of the crevasse below, but we made it safely over and took to the rocks again. There was no serious trouble after this. Some care was necessary in places to avoid loose rocks, but by 12 M. the last trouble was over, and we climbed out on the crest.

The summit of the peak was a large flat area surrounded on all sides by frightful precipices. That on the left fell off toward the Eastern Slope, that to the right or west into the Second Recess of Mono Creek, at least 1,500 feet vertical. To the south the summit of Mount Abbott towered 500 feet above us, and seemingly so near as to be within stone's throw. Without a moment's delay we hurried towards it. Our mesa narrowed more and more, and soon became a knife-edge of the Main Crest. Still we climbed along it, now descending slightly, till finally a little spire was reached and beyond was impossible. Directly in front the knife-edge dropped off abruptly 500 feet into a notch, and on the other side was a clear cliff of 1,000 feet: the north face of Mount Abbott. A more absolute failure could not be imagined. We could not cross the chasm without wings, and could not even descend from our mountain by any other route than the one chosen for the ascent! We did not linger long. Though the scene was superb, it hurt to look at it. We ate our lunch at the end of the knife-edge, and started back. The snow was softer on the return, and we were enabled to slide down and shoot the snow bridge in safety. It was a long, weary tramp back to camp through snow softened by the hot sun, and lower down through the thick brush of the cañon side. Arrived in camp at 4:30, there was still time to move to better feed, so we hurried on the packs in about an hour and pushed five miles down Mono Creek to a beautiful little meadow at the mouth of the Second Recess.

It was hard, very hard, to get up next morning, so we were lazy and did not get off till 8. There seemed to be no way to cross from Mono to Bear Creek by any of the great recesses, and we therefore tramped on down Mono Creek to pick up the main trail which crosses the divide further to the west. In Vermilion Valley we found the flat overrun with cattle, but saw no herders. Thunder caps commenced to gather at 9, and by noon it began to rain. We crossed Mono Creek by a good ford, and climbed the divide to the south. We missed the Bear Creek trail at first, but pushed on up the ridge, hoping to intersect it. About 3 in the afternoon a furious thunderstorm broke, but it lasted only a few minutes, and soon after we had made connection with the Bear Creek trail. By evening the top of the divide was reached and we camped at a small meadow just below the summit. During most of the night it rained, but we slept soundly under our rubber blankets.

Next morning we followed the sheep trail down into the cañon of Bear Creek, and followed that large stream up to the confluence of Hilgard Creek. Here we abandoned the trail and struck out eastward up Hilgard Creek into the wilderness of mountains in the upper Bear Creek Basin. Slowly we worked our way up the stream past several large meadows, and over several very rough places. At one point the creek flowed in a box cañon, and a way had to be found over the high mountain to the right. At another the animals had to be driven up the bed of the creek itself. At the timber line we camped just at the base of Mount Hilgard, and made preparations for another try at Mount Abbott, this time on the west side.

On the morning of July 13, we made our way up the last tributary of Hilgard Creek, carrying only lunch, camera, and rope. For the first hour the way was up a rocky stairway in the creek bed to the entrance of a huge amphitheatre at the base of the Main Crest. A large lake nearly two miles long lay before us. To the left towered the pyramidal mass of Mount Gabb, with Hilgard just behind. In front was the serrated crest of Mount Abbott, guarded along the whole front by a precipitous wall; to the right, a wilderness of peaks, including among hosts of others, Bear Creek Spire. At once we made our way around the south side of the lake, climbing for the most part over huge talus fragments. This consumed much time, and we were an hour reaching the head of the lake. Here we stopped to examine the front of the mountain, and could see but little chance of climbing the side facing us except by a chimney which led to the crest of the ridge about a quarter of a mile south of the summit. A patch of snow in the notch on top seemed to give promise of fairly good climbing along the knife-edge, so we hesitated no longer but set out for the chimney. The climbing was easy all the way up, and there was no danger whatever except perhaps from loose rocks. In about two hours we stood up on the Main Crest again, just to the south of the summit of Mount Abbott. The view in every direction was glorious,—the terrible drop-off of the eastern slope with the desert ranges of the Great Basin on one side, and the wilderness of practically unexplored Sierras on the other. I set up my camera, and took a round of pictures, for a single glance along the crest to the north made it evident that this was probably the nearest that any of us would get to the summit of Mount Abbott. Then we worked along the most awful knife-edge imaginable for fifty yards; that was enough. Huge blocks as large as houses were balanced on the thin edge, and deep chasms gashed it down like the teeth of a saw. A glance was enough for me; I went back to the top of the chimney and lay down in the warm sunshine, while waiting for Hutchinson, who had gone a little further, and was examining the summit with his glasses. It was no use. We started down again, and made our way without trouble to the base of the mountain.

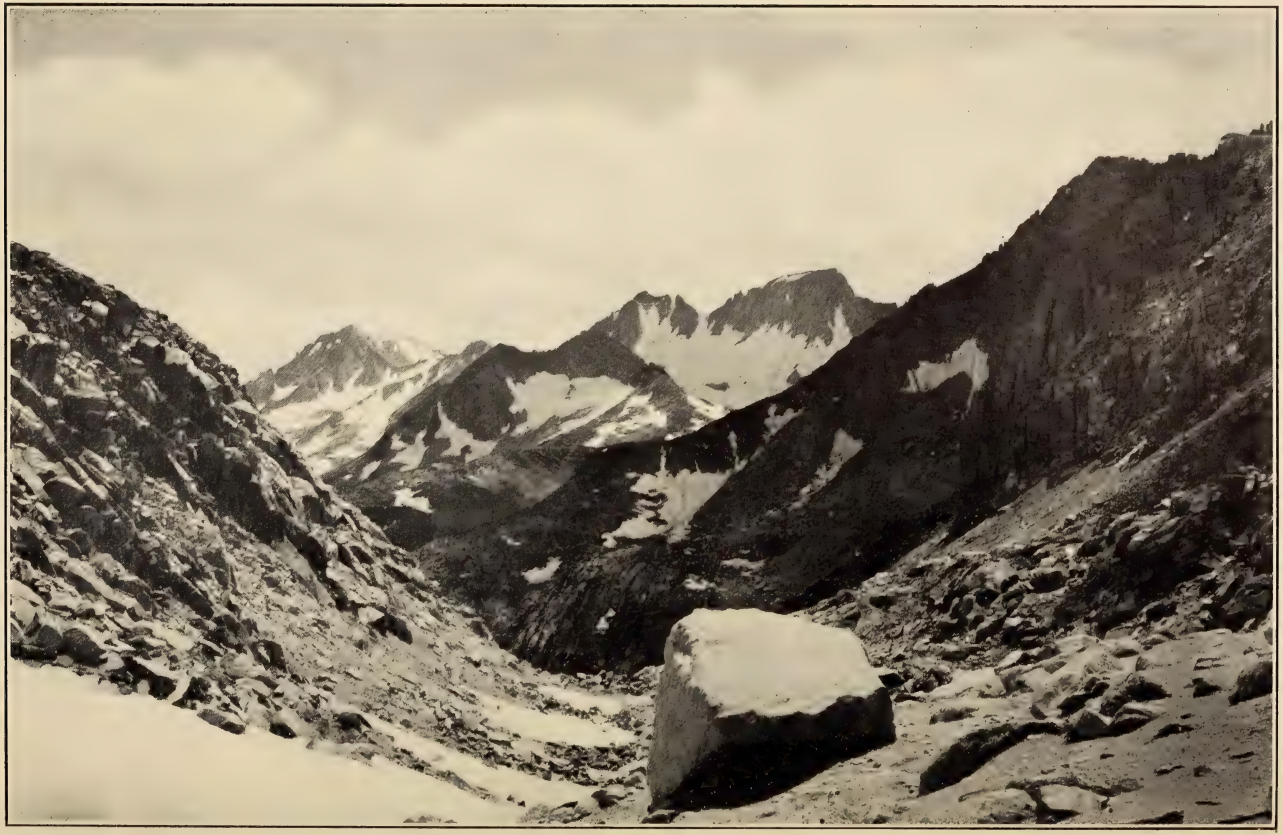
It was still early in the day. We would not give up till every side of the mountain had been examined, so we worked along the base of the western cliff till directly below the summit. Here the wall was somewhat more broken, and offered good rock climbing. Higher up the way narrowed to a chimney, but still the footing was good. We took plenty of time and gradually worked up to within 100 feet of the top. Then the rope was brought into play, and, after two or three ugly places, we finally climbed over the edge once more, this time at the extreme summit, and Mount Abbott was conquered.

There was no sign of any sort to show that the mountain had previously been ascended, in fact, I think it certain that no mountaineer had ever before been nearer than the peak of the Seven Gables, six miles to the southwest. We built a good, solid monument, and left therein a record of the ascent. We rested on the top an hour, when the lateness of the hour warned us to make all haste.

At the first part of the descent the rope was used again, but lower down we were enabled to continue without it. Hutchinson and I followed the Bear Creek Divide along to the gap between Abbott and Gabb and found there a possibility in the way of a pass between the Second Recess of Mono Creek and the head of Bear Creek. It was very rough, but if practicable would make a great cut-off in the High Mountain Route. We then passed around the north side of the lake and back to camp. It was still early enough to move down to better feed, so we packed up at once and changed camp to a meadow about three miles below.

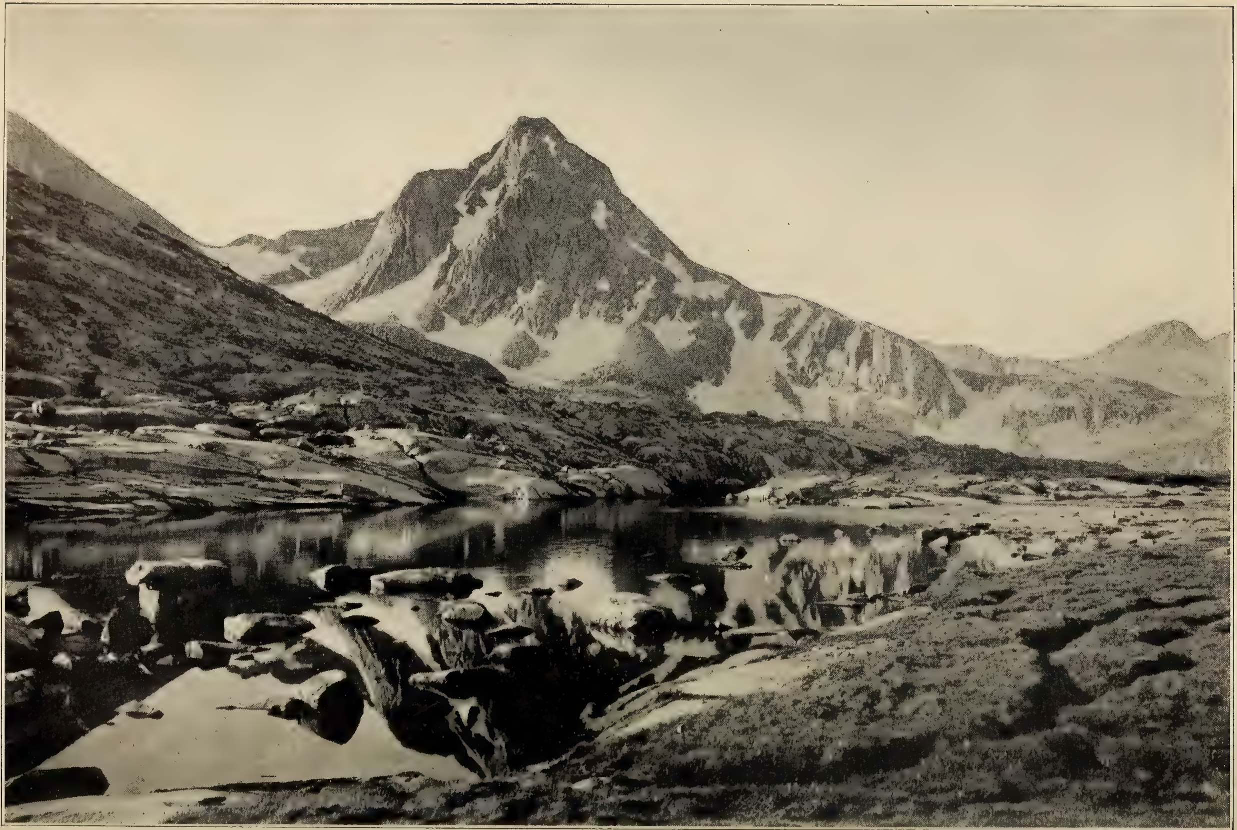
Next morning we followed Hilgard Creek down to Bear Creek, and then up the latter to the base of the Seven Gables. Here we crossed the main stream and turned to the west, following an old sheep trail through thinly timbered country. At a fine, large meadow we lost it, but pushed on southwesterly without a trail, finally reaching an island-dotted lake above the timber line. To our left was Mount Senger, with a gap in the ridge to the right. We made toward it, and soon picked up the sheep trail again at the summit, which was about 11,300 feet above the sea. The view was now down into the cañon of the South Fork of the San Joaquin, and over the far-distant forest belt to the south. Our rocky trail led down past four lakes and numerous meadows to the brink of the cañon. Here a hasty lunch was prepared, and we were off again following down the east side of the creek. The way was dreadfully rough in boulders and manzanita brush, but we finally reached the bottom at the Blaney Meadows. At the Hot Spring we met John Shipp and one of his herders, the first people we had seen since leaving Red's Meadow, and from them we learned that we should have taken the *west* side of the creek during the last descent, and avoided much of the trouble we experienced.

The Hot Spring Camp is delightfully located near the river at the edge of the beautiful Blaney Meadow, and



MT. ABBOTT FROM MONO CREEK PASS.

From photograph from the U. S. Geological Survey, G. K. Gilbert, 1904.



MT. HUXLEY, EVOLUTION GROUP.
From photograph by J. N. Le Conte, 1908.

amidst scenery more picturesque than we had been accustomed to amongst the heights. Altogether the prospect was so pleasing, that we decided to stop over a day here for resting and clothes washing. Hutchinson celebrated with a splendid dinner, to which he invited our newly made acquaintances, and topped it off with a whisky gelatine most artistically concocted.

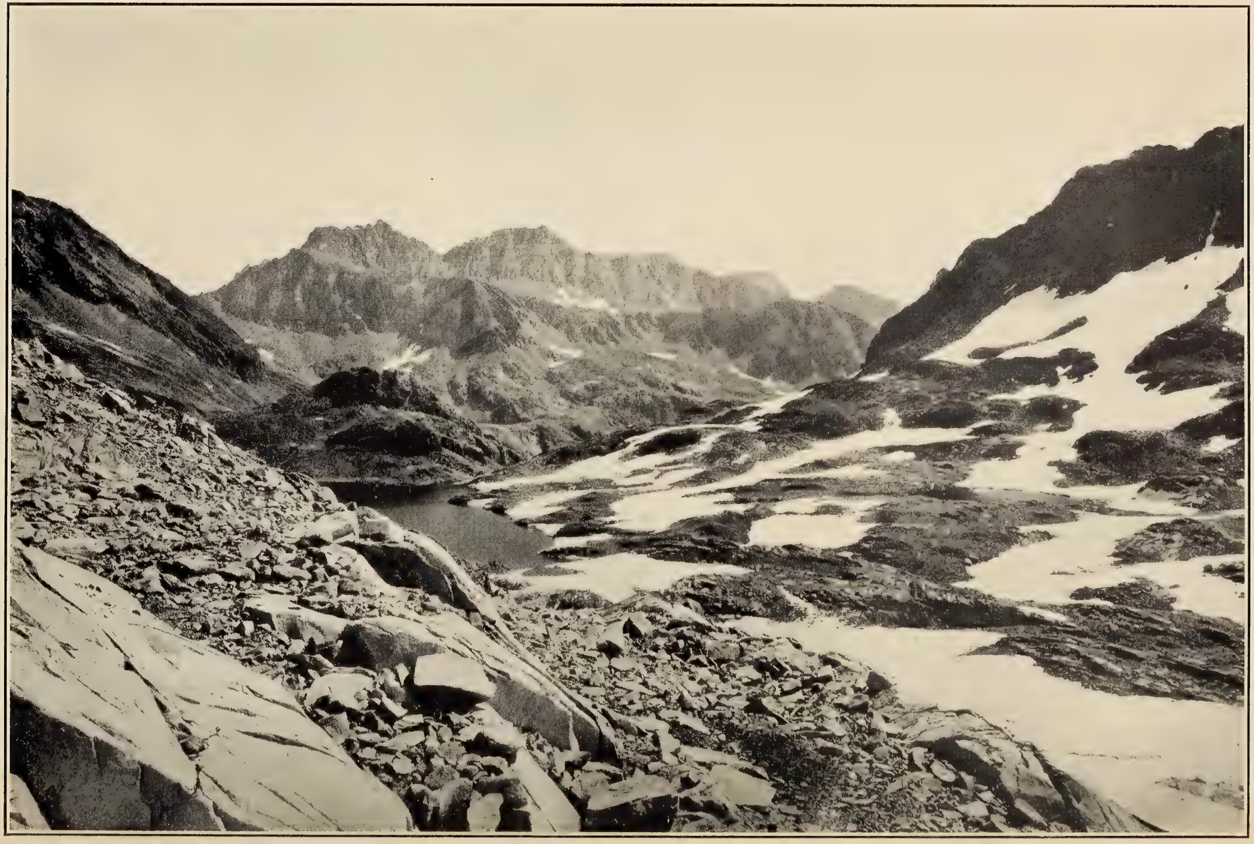
Next day we enjoyed the luxury of getting up late; washed clothes in the Hot Spring, most modern of conveniences, and enjoyed to the fullest extent a thorough "loaf."

On the 16th we took the good trail up the river, crossed Piute Branch, and made a half-day's trip to the mouth of Evolution Creek, there camping for the night. On the 17th we took the sheep trail up Evolution Creek. It worked up the benches to the right of the fall to a large meadow, then crossed the creek at the head of the meadow, and continued up the north side. It passed through a succession of exquisite meadows to the amphitheatre at the base of Hermit Rock. From this point to Evolution Lake, under the shadow of Mount Darwin, there is practically no trail, and the going is a little rough, but we experienced no delay and made camp at the north end of the beautiful lake a little after noon. The afternoon was given over to resting and getting ready for the hard day that the morrow had in store.

The Goddard Divide was now before us,—the key to the whole situation. If we failed in crossing it our plan of a High Mountain Route failed, for the great spurs and cañons between Mount Goddard and Woodworth Mountain formed an impassable barrier to the west of the Middle Fork of King's River, which does of necessity force the traveler as far to the west as Tehipite Valley. The only possible chance of avoiding this awful chaos of peaks was to pass to the east of it, and make use of a gap near the junction of the Goddard Divide with the Main Crest. To be sure the Geological Survey had crossed it in 1907, but at a time when everything above 10,000 feet was under snow. I myself had examined the gap when free of snow in 1904, and at that time considered it impassable to pack animals on the south side. It was clear, therefore, that the success of our trip depended on the next day's work.

The view from our camp was magnificent, especially in the evening, when the rosy glow of sunset spread over the noble peaks of the Evolution Group, themselves reflected in the still waters of the lake. I went to bed early, but woke several times to look out upon the same scene, bathed in the silvery light of the moon.

On the morning of the 18th we were stirring by earliest dawn, and long before the sun rose over the battlements of Mount Darwin were on the way. We passed around the east side of Evolution Lake, and at its head crossed to the west side of the creek. The traveling was easy up Evolution Creek nearly all the way to the Goddard Divide. We passed around the base of majestic Mount Huxley, and at the outlet of the Crystal Lakes crossed the creek again, and kept around the north side of the lakes. The gap was clearly in view, and we took our pack train straight up to it. One bad, rocky place was encountered, and soft snow bogged one animal, but the top of the divide was reached by about 9 A. M. We were 12,000 feet above sea level. Down the other side was an awful looking gorge in the black metamorphic rock, partly choked with snow. But there was no time to consider the prospect. We went straight at it, and took our mules right over the talus piles. They did splendidly, and we had cause to be thankful that they were so well used to the roughest of mountain work. We passed down into the rocky amphitheatre and around the south side of a little black lake, the extreme source of the Middle Fork of King's River. The walls and the slopes of the large talus then began to close in, and we were forced to take our animals down the bed of the creek between them. It was a critical place, for a fall six feet high in the stream might at this



VIEW SOUTH FROM THE GODDARD DIVIDE.

From photograph by J. N. Le Conte, 1908.

LOOKING DOWN UPON GROUSE MEADOW.
From photograph by J. S. Hutchinson, 1908.

LOOKING UP GROUSE VALLEY.
From photograph by J. S. Hutchinson, 1908.

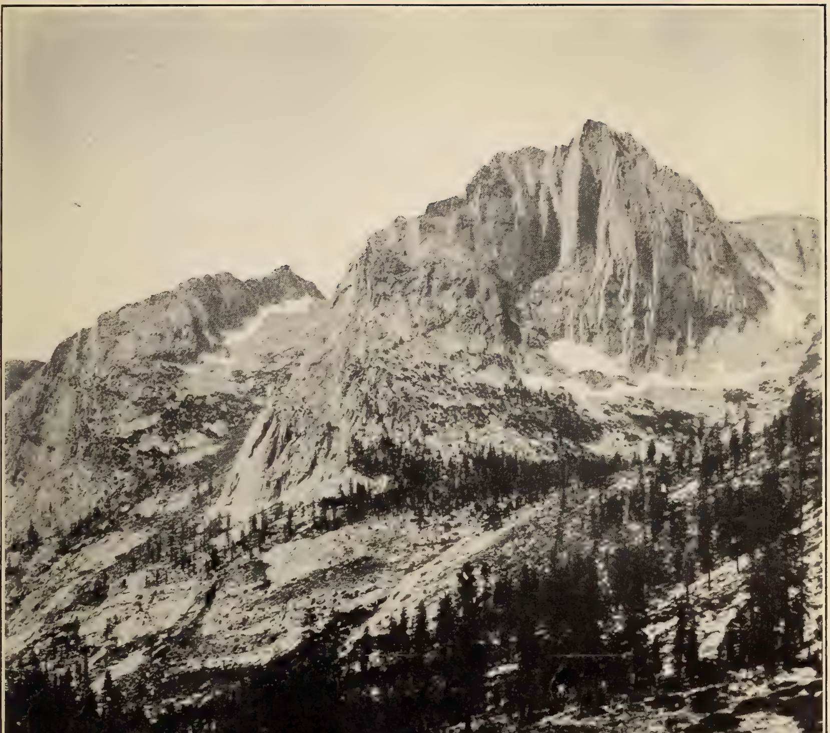
place have put an end to our trip. By 11 A. M. we had successfully negotiated the first mile of the descent, and stopped to rest and eat a few crackers and prunes. Then on down the savage gorge. Soon the stream became entirely impracticable, and we were forced to climb out on the right (south) side over a little gap two or three hundred feet above. Here a stupendous panorama of the whole head of the Middle Fork burst upon us. We could look directly down the main cañon. Straight across the basin rose the spires of the North Palisades, and further to the south the wilderness of Cartridge Creek. The creek we had just abandoned dropped off in waterfalls hundreds of feet into the head of the cañon, and directly below us were cliffs, so there was nothing to do but to work off horizontally across the talus slopes, and look for a way down. By the best sort of luck this was accomplished, and by noon our mules were resting their bleeding feet in the little meadows near the stream again. We thought our troubles over, and so started at once down the east bank of the river, but were soon stopped by a sheer cliff 200 feet high stretching clear across the cañon. We had to retreat, cross the river, climb high up the other side, and descend through a chute to the base of the cliff. Again we were obliged to cross, and so it went, first on one side and then on the other, of the foaming torrent, often crossing right in the talus piles, taking greater and greater chances with our animals, till about 4 P. M. we came to a meadow at the foot of the steep descent, and camped in a beautiful grove of tamarack pine. We were tired, and soaking wet, but happy in having accomplished our principal object.

The next day's trip was a most glorious one. The cañon of the Middle Fork opened out before us, and the traveling was easy. The west side rose in gigantic cliffs three and four thousand feet high. One precipice of clean white granite towered directly above camp. Lower down a great mass of black slate rose like a watch tower. First we descended a bushy slope to a beautiful meadow, and then on down the river to the mouth of Dusy Branch. Here we picked up the sheep trail which crosses the Sierras north of the Palisades, and made good time on down the cañon. Gradually it widened more and more, the walls rose to still more imposing heights, till suddenly we emerged into the beautiful Grouse Valley, an emerald in a setting of granite, through which the river swung in great loops. At the lower end we made camp at noon.

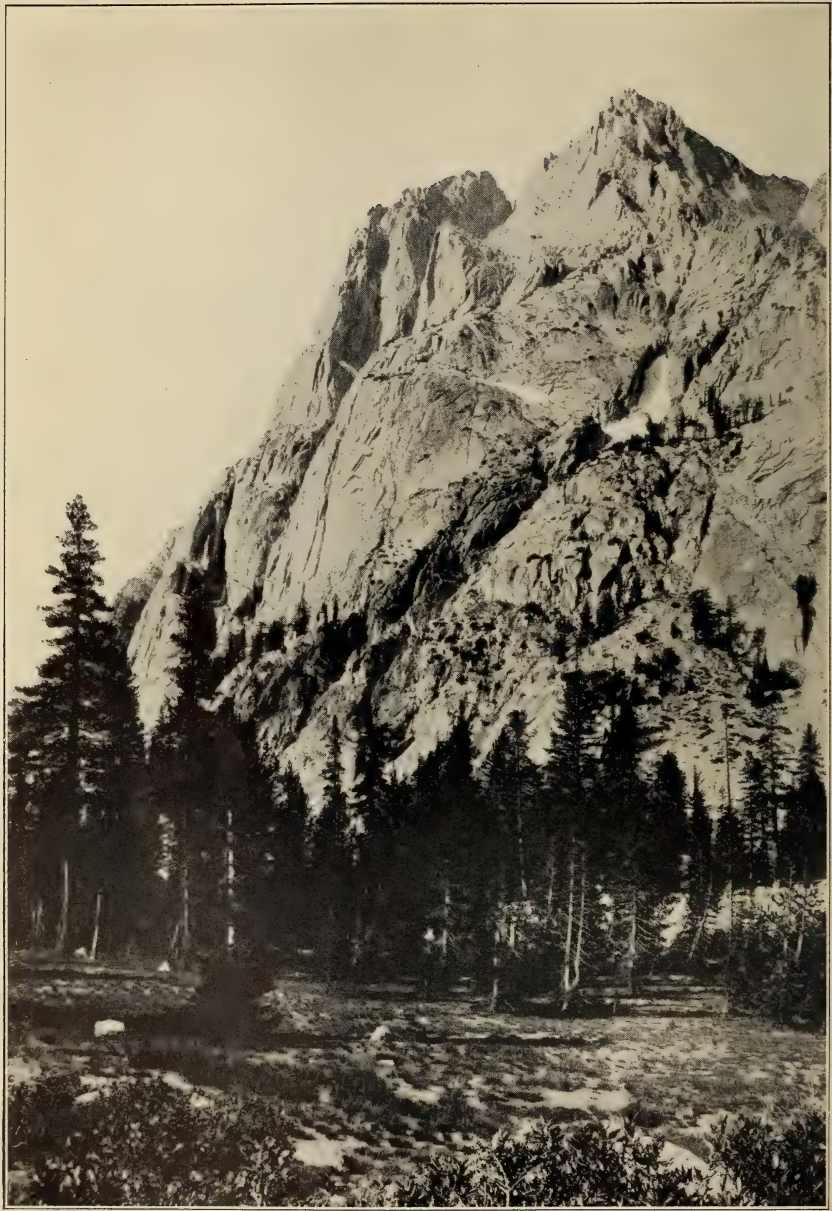
Grouse Valley is one of the most beautiful, if not the most beautiful, of high-mountain meadows. Its chief charm lies in its absolute wildness. Not an average of one party in three years penetrates this fastness, for there is no trail leading into it from the west. The river cañon down to the mouth of Cartridge Creek is exceptionally rugged, and impassable for pack animals, in fact I know of but two parties who have knapsacked through it. We spent the whole of the afternoon and part of next morning with the glorious scene before us, and then all unwillingly took our way up Palisade Creek, the main eastern tributary. There was just enough of a track through this great glacial valley to show that a sheep man or two had been up it in the early days. We encountered some rough talus, but got through all right as far as the mouth of Cataract Creek, camping again just after noon about a half mile below Glacier Brook.

On the morning of the 21st we set out to explore the head of the creek. We now had the difficult problem before us of getting out of the Middle Fork Basin. There were two possible ways, one up Palisade Creek to its head, and over the Monarch Divide to the South Fork of King's River, and the other up Cataract Creek to Cartridge Creek, from which a sheep trail led to the South Fork. The former lay nearer the crest, so we determined to explore that first.

Soon after leaving camp the valley became choked with brush. We fought through this for upwards of a mile, and then encountered heavy talus. We spent much time searching for an animal route through this, but with



CLIFFS IN THE CAÑON OF THE MIDDLE FORK OF KING'S RIVER.
From photograph by J. N. Le Conte, 1908.



CLIFFS IN THE CAÑON OF THE MIDDLE FORK OF KING'S RIVER.
From photograph by J. N. Le Conte, 1908.

only partial success. Higher up the creek plunged over a bluff about 1,000 feet high. Several chutes or broad chimneys cleft this near the east wall of the cañon. Hutchinson took one to the left, and McDuffie and I one nearer the fall. In a very short time ours proved to be impassable for animals, but we continued on to the top of the fall, hoping to hear better results from our companion. However, his success had been no better than ours, though he had partially examined another chute still further to the left that seemed promising. Leaving this doubtful part of the route to the return, we pushed on up the creek, past two large lakes, and toward the Monarch Divide which towered at its head. We found the hoped-for pass and made our way to the top, though the going was very rough.

Down the other side it dropped off in an easy slope of boulders and sand, and we could look straight south for miles down the basin at the source of the South Fork of King's River, all easy traveling through sand and thin timber, so after a hasty bite of something to eat we turned our attention again to the terrible gorge of Palisade Creek, and began to work out the way foot by foot back to camp. From the crest of the pass for the first mile we monumented every step of the way over a continuous slope of talus. It was dreadfully rough, worse, it seemed to me, than the Goddard Divide, but still possible. Around the lakes we worked out a way, though one bad cliff worried us. Then at the edge of the great cliff we started a careful search for a passable chute. McDuffie and I went down the one Hutchinson said had looked promising, but found it choked with such awful talus that it was all a man afoot cared to tackle. The talus and brush below the cliff seemed worse than in the morning, so we gave it up as a hopeless job and returned to camp about 6 P. M. Hutchinson came in two hours later, with no definite results. So the day's work proved a failure, though I still think that with sufficient time and patience a route could be worked out past that cliff.

There was no use exploring out a route up Cataract Creek in advance of the packs, for there was no other way out of the dilemma, and we knew that the Geological Survey party had gotten out by that route over the snow in 1907. So we got an early start and went at it. There was no trouble whatever for the first couple of miles, but above that we got into the talus. We avoided some of this by going over the snow, but got into it again, took pretty desperate chances with our mules, and had to unpack one that fell amongst the rocks. Above this rough place the going was easier to the base of the pass, which now rose 1,200 feet above us in long slopes of talus and then of snow. We could see no possible way of crossing the talus, so camped at the last little patch of green, cooked a good lunch, and started up the pass in the afternoon to explore. The first 500-foot rise was talus; from there to the top, 700 feet of unbroken snow. If we could only get our mules up to the snow, the rest seemed comparatively easy, so while Hutchinson went on up to the top to see what the other side was like, I searched out and monumented a way over the rocks down toward camp. By keeping in the smaller rocks I found a passable route to within 150 yards of the meadow, but across this strip of huge talus, a trail must be built. McDuffie came up from camp, and he and I went to work rolling out boulders and filling in holes. Hutchinson joined us in a short time, and we worked steadily most of the afternoon, finally completing a track across the rocks.

Of all our high camps this was the most glorious. Straight out to the east towered the gigantic pile of the Palisades, and between them and us the cañon of Palisade Creek cut profoundly into the granite. Behind rose the pyramid of Observation Peak, and near it our snowy pass, while to the right and left arose scores of unnamed points—the heart of the Middle Fork Sierra. We sat for a long time on the rocks below camp, and watched the brilliant light on the Palisades fade into the rosy alpine glow, and gradually into the blackness of night.

At the break of day we were up, and soon started across our newly made trail. We took it very slowly and crossed without accident. Then up the loose stuff to the snow. This was in fine condition and we experienced no further trouble in getting to the top, some 11,700 feet above sea level. Down the other side led off a branch of Cartridge Creek. It was all easy traveling at first, but got rougher and rougher. There was no backing out now, however, and we simply tore our way down that cañon through brush and over rocks to the main Cartridge Creek, which was reached without an accident, though our animals' feet were pretty badly cut up on the slate talus. Now we struck a trail again, and hurried up Cartridge Creek, reaching Lake Marion at 5 P. M.

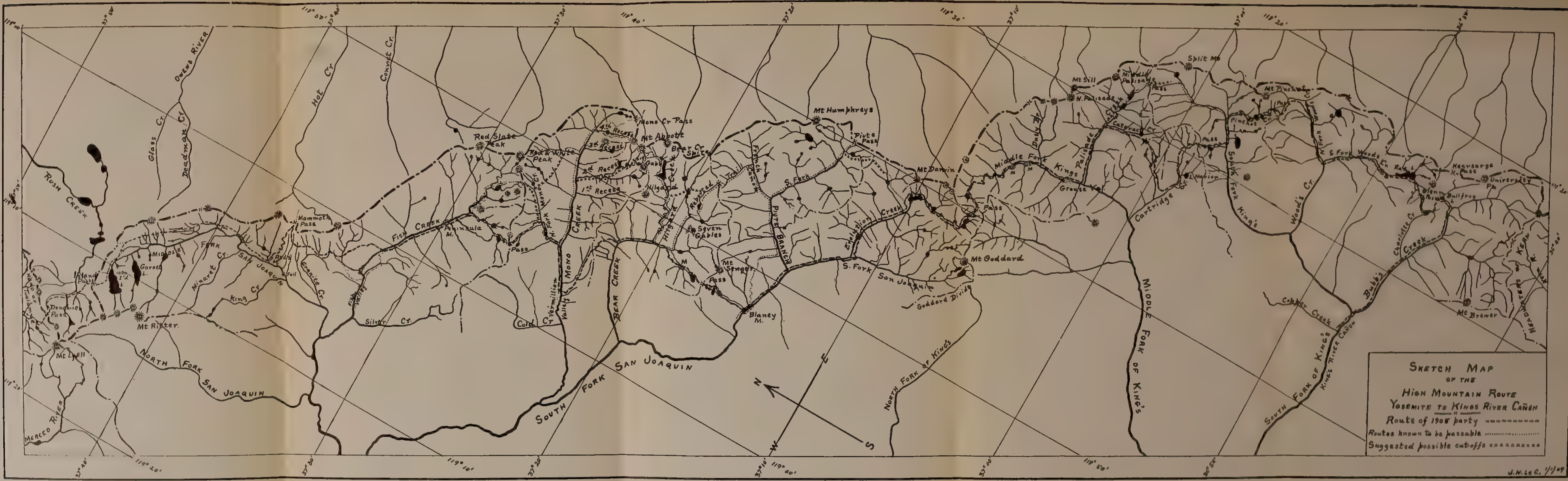
The trip the next day (July 24th) presented no serious difficulties. We followed Cartridge Creek to its head and crossed by a good sheep trail to the upper basin of the South Fork of King's River. The pass was 11,700 feet elevation, and the first part of the trail down the other side was a little rough, though it improved lower down. The traveling up the cañon of the South Fork was not hard, but was disagreeable on account of brush and swamps in the tamarack pines. At the confluence of Pinchot Creek we stopped for noon, and then climbed out of the cañon alongside this stream into a glorious alpine pasture, where we camped amid flower gardens at 10,600 feet. This was one of those rare spots in the Sierra above the timber line where grass covers the hills and valleys, like the Coast Range in spring.

Next day it was up Pinchot Creek. Nowhere was the way very rough, even up to the crest of the pass just to the west of Mount Pinchot, 12,000 feet elevation. This let us over into the watershed of Woods' Creek, and the first drop-off was rough. At the lower end of the basin we found the Sawmill trail, and hurried on down the stream to the junction of the main forks for lunch. In the afternoon we followed up the South Fork of Woods' Creek, to the second lake of the chain, and camped about a mile below Rae Lake. It was cloudy and threatening that night, but no rain fell till 4 A. M., when a heavy shower passed over.

Shortly after daybreak on the morning of the 26th, the clouds broke away somewhat, and we got a good start. At the strait between the two parts of Rae Lake, two of our mules got into deep water and soaked their packs. How fortunate it was the day before the end! Going up the slopes of Glenn Pass, a heavy rain commenced, but we pushed right on up and reached the crest by 10 A. M., thus conquering our last 12,000-foot pass. There was little or no snow on the pass, and the trail was pretty rough. We attempted to follow the trail down the Bubbs' Creek side, as shown on the map of the United States Geological Survey, and got into some very bad places. We discovered later that the trail goes directly down the cañon from the pass without bearing off to the west. We ate lunch in the meadows below Lake Charlotte, and soon after picked up the big, broad, well-traveled Independence trail at Bullfrog Lake. That night we camped at the base of the East Vidette.

By 11 o'clock on the morning of July 27th, with our mules and our outfit whole, we arrived at Kanawyer's Camp in the King's River Cañon, and our great trip was over.

The appended sketch map shows our route. The heavy dotted line shows our main High Mountain Route. Side trips, sheep trails, and other animal routes known or reported to be passable, are shown by lighter dotted lines. Suggested possible cut-offs are shown by rows of crosses. Of these nothing definite is known. They merely indicate regions which require more careful exploration. The High Mountain Route as traversed by our party in 1908 covered about 228 miles, though including side trips we ourselves walked over 300 miles. We were out in all 27 days, but the actual time required to make the through trip was only 20 days.



SKETCH MAP
OF THE
HIGH MOUNTAIN ROUTE
YOSEMITE TO KINGS RIVER CAÑON

Route of 1908 party
Routes known to be passable
Suggested possible cut-offs
J.N.LeC. 1/1/09
Rush Creek
Glass Cr.
Deadman Cr.
Owens River
Hot Cr.
Convict Cr.
Island Pass
Donohue Pass
Mt Lyell
Mt Ritter.
Garnet L.
Middle Fork
San Joaquin
Minaret Cr.
King Cr.
Granite Cr.
Reds M.
Fall
Mammoth Pass
North Fork San Joaquin
Merced River
Silver Cr.
Fish Valley
Fish Creek
Peninsula M.
Pass
Red Slate Peak
Red & White Peak
Mono Cr Pass
4th Recess
3d Recess
2d Recess
1st Recess
Mt Abbott
Gabb
Bear Cr Spire
Hilgard
Hilgard Creek
N. Fork Mono Cr.
Mono Creek
Vermillion Valley
Cold Cr.
Bear Creek
Seven Gables
Mt Senger
M
Pass
Blaney M.
South Fork San Joaquin
French Canon
Reported Trail
S. Fork
Piute Branch
Mt Humphreys
Piute Pass
Mt Darwin
Evolution Creek
S. Fork San Joaquin
Mt Goddard
Goddard Divide
North Fork of King's
Pass
Middle Fork Kings
Grouse Val.
Dusy Br.
Palisade Cr.
Mt Sill
N. Palisade
Middle Palisade
Pass
Cataract Cr.
Split Mt
Pinchot Cr.
Pass
L. Marion
Cartridge Cr.
South Fork King's
Middle Fork of King's
Mt Pinchot
N. Fork Woods Cr.
S. Fork Woods Cr.
Rae L.
Woods Cr.
Kearsarge Pass
University Pk.
Glenn Pass
Bullfrog L.
Charlotte Cr.
Bubb's Creek
Copper Creek
South Fork of King's
King's River Cañon
Kern R.
Headwaters
Mt Brewer
N
E
S
W
119° 10'
119° 20'
119° 10'
119° 00'
118° 50'
118° 40'
118° 30'
118° 20'
37° 50'
37° 40'
37° 30'
37° 20'
37° 10'
37° 00'
36° 50'
36° 40'

WITH THE SIERRA CLUB IN THE KERN CAÑON.

By Marion Randall Parsons.

One of the tenderfeet had fallen behind on the trail. A two o'clock arising and a long morning of staging, followed by a walk of seven hot, steep, dusty miles, had proved too much for urban muscles and wind and she had lagged behind. Nearing camp in the early dusk she saw brightly burning fires and a cheerful animation about the commissary department, denoting, she supposed, a dinner hour postponed to meet the needs of weary stragglers like herself. What was her horror, then, to hear roared in tones of authority:

"Last call for lunch! Get your lunches for to-morrow! You'll have to hurry!"

"Gracious!" thought the tenderfoot with mounting uneasiness, "I've missed dinner and breakfast and nearly lost lunch! If they are as forehanded as that with all the meals I'll starve."

It was therefore something of a relief to find that Charley Tuck, with a soft spot in his lazy old heart for laggards, had kept the soup and other comforting things piping hot for the last comers, and to observe his assistant slicing bacon for the morrow's breakfast; but many days had elapsed before that first impression of strenuous camp life was wiped from her mind.

Indeed, the first days of a Sierra Club outing, when the big party is on the march from civilization to camp, have in them little leisure for man or beast. The morning of July 1st, the second day of the outing, but the first of real camp life, dawned very early for us. At 4 o'clock a sleepy Chinaman banged a dishpan with a spoon, yelling a Mongolian version of "Everybody get up!" The cry was taken up by each Sierran as he awoke, until the whole camp was chanting it in unison. A short lull succeeded this pandemonium, while fingers were busy with shoe laces and the bewildering intricacies of packing. Before the last novice had crammed his belongings into his dunnage bag most of us had finished breakfast and started on the trail.

Wishing to avoid the high passes of Farewell Gap and Coyote Pass, which wrought such havoc among pack-mules and tenderfeet five years ago, we this year chose the trail to the Kern leading from the Springville road past Nelson's and over the ridge to Fish Creek and the little Kern.

Our first night's camp was situated a couple of miles below Nelson's in a grassy cañon wooded with oaks and a few pines. Passing the little settlement with its neat orchards and brown hay-fields, we were soon among the conifers, giant yellow and sugar pines, cedars, and even a group of fine sequoia.

It was all climbing that morning—from oak and chaparral to pines and bear clover; to forests of silver fir and red fir, whose carpet of brown needles was brightened here and there by the flash of a red snow plant; to clear streams bordered with mimulus and columbine running through green meadows where the cyclamen bloomed; and higher still to the silent tamarack country with its marvelously blue sky and its trail of white granite sand. Here we had done with climbing and could swing along a comfortably level trail with an occasional outlook up the cañon of the Little Kern to the high mountains at its upper end bounding the well-remembered pass of Farewell Gap. Then it was down, down, down to the valley of Fish Creek, where camp was made for the night.

An amusing incident of the next day's travel was the fording of the Little Kern, the more cautious members laboriously removing high boots and stockings and picking their painful way across the rocky bottom barefoot, while a few of the more enterprising made almost as amusing a picture hopping across on the rocks below the ford. A short climb out of the Little Kern brought us to the lower end of Trout Meadows, whenceforward it was easy traveling, up the meadows and the long defile that led us to the brink of the Kern Cañon cliffs.

The first permanent camp was established on the neck of land lying between Kern River and the lower Kern Lake. This is the smaller of the two lakes the cañon boasts and is admirable for swimming, the water being quite warm. The upper lake, separated from the lower by one of the kernbuts that are characteristic of this cañon, is a comparatively recent addition to the landscape, having been formed less than a half century ago, either by a landslip, or by debris brought down from a small side stream during a flood, which dammed the river at the mouth of its narrow passage between the east wall and the kernbut. The stumps of trees killed by immersion in the lake thus formed are still standing in great abundance, some of them eight or ten feet out of water; others, lying concealed beneath it, make boating, especially in the canvas canoes that enthusiastic fishermen like to use, a rather dangerous pastime.

The fishing in this lake and in the river, both above and below it, is a well-known attraction of the Kern, and our fishermen found it a paradise for them this year. Even the inexperienced anglers had a share of the good luck. Dark stories are told of the unsportsmanlike deeds of one of the fair fishermaidens, who was observed to drop her rod with a whoop of delight, splash ankle-deep into the river and haul in a two-and-a-half-pound trout hand-over-hand. And when a pained bystander offered a few hints on the advisability of playing a fish, she remarked tranquilly:

"Well, I got him, didn't I?"

But it must be said of our fishermen, that they were most temperate in their enjoyment of the unusually fine sport, and that by common consent all fishing would cease for a day or two lest the fish appetite fail and the victims of the rod be wasted.

Fishing, swimming, and a two-days' trip to the volcanic region in the vicinity of Golden Trout Creek occupied the first week of the outing, at the end of which camp was moved ten miles up the cañon to the junction of the Big Arroyo with the Kern.

An interesting feature of the side trip to the volcanoes was an experiment in stocking a lake with golden trout.

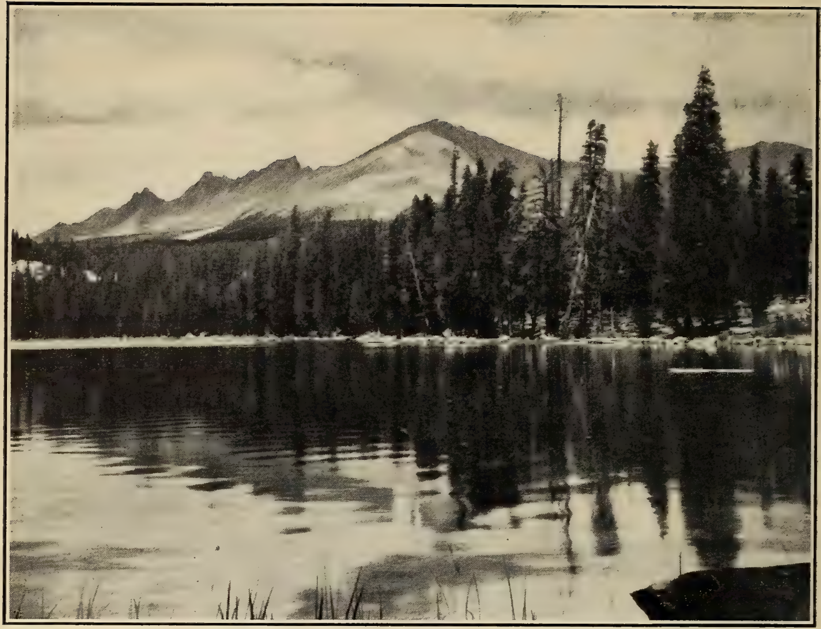
There has been a close season on golden trout for several years and the only fish of that variety caught by our party were the hundred that were transplanted.

Up in the camp at Long Meadow the word went forth from the Deputy Fish Commissioner that for a short half hour the ban would be lifted and those desirous of catching the far-famed trout would be given the opportunity to aid in this, our first fish-stocking experiment. A dozen fishermen lined up on the banks of Golden Trout Creek with half as many agile assistants in attendance, each armed with a pail of water. The successful angler, crying peremptorily for "Pail!" much as the distracted shop girl summons "Cash!" on a bargain day, dropped his gleaming captive into the pail. Thence it was transferred to the large fish cans, shaped like milk cans, but with ventilated stoppers, which, strapped to a pack mule, served to carry the fish on the trail.

The golden trout were not only wonderfully abundant, but kept biting so fast that the assistants were taxed to their utmost to respond to the calls. In a very short time the cans were filled to the requisite number, when the ardent anglers reluctantly ceased fishing. The mules were in waiting and the unwilling emigrants were at once started over the rough, steep trail to their new home, a lake beautifully situated on the high plateau between the Kern Cañon and the rugged gray peaks of the summit crest. A curious contrast was observed in the actions of the golden trout when released to those of the rainbow trout transplanted in a subsequent experiment at Moraine Lake. The golden trout leaped from the can and sped at once far out into the lake, while their less gamey

FISH PLANTING ON GOLDEN TROUT CREEK, FORMERLY VOLCANO CREEK, KERN RIVER REGION.
From photograph by Glenn Allen, 1908.

FISH PLANTING IN MORAINE LAKE, KERN RIVER REGION.
From photograph by Glenn Allen, 1908.



KAWEAH PEAKS FROM MORAINE LAKE.
From photograph by C. W. Pohlmann, 1908.

FISHING SCENE ON KERN LAKE.
From photograph by James Rennie, 1908.

brethren, the rainbow trout, went timidly, and as long as we watched them kept near the bank, swimming close together in a school.

From the camp on the Big Arroyo a party of forty-six started for the climb of the South, or Red Kaweah Peak. About a mile north of camp the trail led up the cañon wall to the high country to the west known as the Chagoopa Plateau. The sky was overcast when we started and we had not been long on the trail before the rain overtook us, light, grateful showers that hung sparkling drops in the firs and washed the dust of the trail from the delicate pink pentstemon and purple daisies that brushed against us as we passed. Now the clouds would part, showing a distant snow-capped peak or a patch of brilliant sky; or again a downpour of heavy drops would drive us to the shelter of a friendly yellow pine or a canopy of tamaracks.

Our trail, after leading us across the wooded plateau for several miles, all at once emerged from the shadow into the wide, level stretch of country named the Upper Funston Meadow. It was as if the gate to the High Sierra had suddenly been thrown open, for beyond the green meadow with its little meandering stream and its gay carpet of flowers rose the nearby western peaks which the trees had hitherto concealed from us, the Red Kaweah, gray Needham with its steep eastern precipice, and the square-topped, unnamed ridge to the south.

At the ranger's cabin near the southern end of the meadow (a spot endeared by the memory of a fruitful strawberry bed) the trail became quite indistinct. We passed from one flower-studded meadow to another and beyond the third one climbed the rocky moraine that gives its name to Moraine Lake. As this was our rendezvous with the pack train, and as the weather was still inhospitable, we built a great camp fire on the lake shore where, contentedly enough, we turned now a wet side to the fire and now a dry side to the rain until we reached a condition of moist steaminess rather suggestive of Turkish baths.

Towards 1 o'clock the pack train reached us. The mule bearing the fish cans was brought to the lake shore and the rainbow trout, caught that morning in the Kern, were with due precautions deposited in the lake. They seemed a little dazed after their rough journey, or perhaps they were confused at being the center of interest for so large a group of people, for they had not ventured to swim into the depths of the lake when we left.

Our plan was to head in a northeasterly direction and camp as high as possible on the slope of the Kaweah. An attractively situated lake (on the map!) was our provisional destination.

We formed a picturesque procession, trailing through the woods, women in scarlet sweaters and short skirts; men, khaki colored, both as to clothing and complexion; and the sedate, slow-moving pack animals. Crossing wee, flower-decked meadows we followed a little soft-voiced stream whose merry chatter was lost once in a while in a burst of thunder or rush of rain which sent us scurrying to shelter. The lake was found at last, a pretty little sheet of water, but so meagerly furnished with the elements of comfort that we turned our backs on its rocky shore and scanty timber and descended half a mile to the edge of a meadow where we made camp. Even there the trees were mostly "all high and no wide," as the disgusted Jap cook expressed it, and as light showers continued to fall throughout the night more than one aspiring mountaineer awoke next morning to find one extremity or another resting in a puddle of water.

After breakfasting by firelight, we quickly formed in line and were ready to start by dawn. Following an easy contour we soon reached timber line, where the more difficult climbing began.

The South Kaweah, bearing the reputation of being an easy peak to climb from any point of attack, had been chosen by the committee as a try-out for Whitney. It was, therefore, a most startling surprise to our leaders to find the climb almost from the first beset with difficulties and dangers far greater than any to be found on Whitney. Our approach was from the south, where a rocky spur seemingly afforded easy access to the main body of the mountain. Almost at once, however, we found ourselves in a short but very treacherous chimney where every moment we were menaced with that gravest of dangers to a large party, falling rocks. In mountain-climbing many places which may be surmounted with ease and safety by two or three climbers may become veritable death traps where thirty or forty people are concerned; and so, though probably not many of the novices appreciated it, the few minutes in that chimney were much more hazardous than the dramatic climbing we encountered on the knife-edge connecting our spur with the mountain proper.

I think few of us will ever forget the first glimpse of that wicked, crumbling knife-edge that we caught from the high pile of rocks above the chimney—half a mile, or more, of it, sapped right and left by the snows that, gathering in the vast cirques at its base, insidiously loosen and undermine the great boulders, leaving them, after the thaw, so lightly poised that a touch might set them loose. Its great advantage, however, lay in the fact that our line of progress led along its crest, where a loosened rock might crash its harmless way down the precipice without danger to the climbers who were now behind instead of beneath its course—always providing that it did not carry a climber with it. This last danger, indeed, and the necessity for carefully testing the stability of each rock before venturing its support for hand or foot, wrought in some of us such excess of caution that we could scarcely induce our reluctant limbs to move at all. It seemed the wildest of follies to stir a hairbreadth from the hand- or foot-hold which had proved firm toward the untried possibilities that the next step held. Slowly, and with the greatest care, we crept, crawled, and clambered along that knife-edge, some of us grimly silent, some amazingly voluble, while far below us the voice of Stub, the packer's dog, who had obstinately and trustfully persisted in following us that morning, could be heard in violent protest against the folly of mankind and mountaineers.

Of the forty-six climbers who started forty-one reached the summit before noon. The few who failed to register had made the worst part of the climb, but were prevented by mountain sickness from attempting the final thousand feet of safe but difficult work that lay between the end of the knife-edge and the summit. So they were guided down one of the intersecting ridges to the south.

Those of us who reached the goal will long remember the panorama which greeted our eyes. Northward, close at hand, loomed the deeply dentated crest of the North Kaweahs, their rugged flanks descending in sharp knife-edges towards the treeless upper reaches of the Big Arroyo; the Great Western Divide lay beyond, lofty, boldly carved peaks and giant cirques in whose barren waste of rocks and snow scores of little glacial lakes shone and glittered like jewels; to the south and east the series of high plateaus were merged into one vast plain cut deeply by the Big Arroyo and the Kern; and facing east and towards the north again we looked across the basin of the Kern to Williamson and Whitney, their mighty forms half veiled in storm clouds.

The western slope, which we chose for the descent, proved to be composed of loose shale, easy on the downward path, but of so tedious and uninspiring a nature for an ascent that, forgetting the tremors of the morning, we were soon congratulating ourselves on having missed its drudgery and having enjoyed the most interesting climb the Kaweah could have afforded. While we had been climbing the packers had moved camp to the shores of Moraine Lake. There, at the close of the day, we found them, with fires cheerfully burning and supper under way, and Stub, weary and footsore, but with unchastened spirit, ready to greet each returning mountaineer with wild yaps of delight.

ON KNIFE EDGE OF SOUTH KAWEAH.
From photograph by Eva Channing, 1908.

CREST LINE OF SOUTH KAWEAH.
From photograph by Eva Channing, 1908.

OVERLOOKING OWENS VALLEY FROM MT. WHITNEY.
From photograph by James Rennie, 1908.

Following a climb of so many varied emotions, the ascent of Whitney came to many almost as an anticlimax. Whitney is easily accessible to all whose heart and lungs can stand its rarified atmosphere, and probably no other mountain in the world unascended by a railway can boast such an enrollment of visitors. Five years ago 150 members of the Sierra Club registered there; this year fully 100 added their names to its list.

Starting from the main camp on the morning of July 14th, we journeyed up the Kern as far as Junction Meadows, the first night's camp. It was a perfect day. Exquisite little meadows, full of flowers, here and there invaded the groves of tall pines, of firs, and of libocedrus that filled the floor of the cañon in its more fertile reaches; sandy flats, forested by junipers, ragged, bent, twisted, incredibly old, contrasted strangely with the verdant meadows; lofty cliffs of wonderful sculpture and coloring towered above us close on either hand; and always our course lay near the shining river which now leapt and flashed over a rocky bed in the sunlight, now swept in wide curves under the green gloom of the cottonwoods.

A steep climb up the cañon wall next morning made a short cut to Crabtree Meadows, the base-camp for the Whitney climb. This short cut was only discovered after considerable exploration by one member of our party and should be definitely marked for the use of pedestrians, as it is five or six miles shorter than the horse trail.

The Whitney climb, while uneventful, was very successful; and those who enjoyed the unrivalled view from the summit, the endless chain of peaks and the wonderful sight of the Inyo Desert lying over ten thousand feet below returned full of enthusiasm.

A few days later we broke camp at the Big Arroyo to start on the homeward trail. The story of the knapsack parties which cut across country to the Giant Forest is told elsewhere; the main party journeyed with the packtrain by way of Coyote Creek and Farewell Gap. Bullion Flat, remembered by those of us who visited it five years ago as the bleakest, most desolate and uncomfortable camp the Sierra Club ever made, was this year a part of a wonderful flower garden whose masses of color stretched in almost unbroken splendor from Coyote Pass to Farewell Gap. From Mineral King the party crossed Timber Gap and made a short day's trip to Redwood Meadows, giving a few energetic members the opportunity to climb Sawtooth Peak.

The last day on the trail was one of many beautiful pictures—a brilliant dawn flying rosy banners far above the majestic crowns of the sequoias; a golden sunrise gleaming upon the wild, serrated skyline of the Great Western Divide, which rises high above the cañon of the Kaweah; an ever-widening panorama as we gained the heights of the Seven-Mile Hill; a camp among the firs, and a rocky point from which we glimpsed the sunset land.

And another last picture we remember, the campfire in the Giant Forest—the dark circle of trees; the inner circle of faces, dimly illumined, receding into shadow at the edges; and the firelight strong upon the central figure, our chief, John Muir, who, making his life one with the mountain world, has learned through its beauty and its wonder to read its soul.

DOWN THE KERN-KAWEAH.

By George P. Putnam.

You all know how the party began their arduous day, on the Kaweah climb, at an hour when sane city folk are returning from their theater suppers. We leave to other hands the task of picturing the ascent—the chimneys that ended nowhere, the rock-work along the sky-cutting knife-edge — and hasten to the summit, whence our party diverged from the other climbers.

My companion, Mr. Dyer, and myself had carried packs with bedding and three days' "grub," which additional weight, as may well be supposed, added not a little to our appreciation of the peak's altitude, for foot-pounds of work accomplished form a splendid basis for altitude computation. Briefly, our plan was this: We desired to see the head of the Big Arroyo, to cross the divide, approximately 12,500 feet in height, separating Nine Lake Basin from the beginnings of the Kern-Kaweah, and once into the valley of the latter, to follow it down to its influx with the Kern at Junction Meadow. Thus we hoped to browse in pastures new and possibly come across some mountain scenery of a different character from any yet encountered. As a matter of fact, our plans, if they could have been dignified by such a title, were of the most hazy kind. Indeed, we trusted entirely to our government maps, and started out secure in the knowledge that we could blame our mistakes to these.

Having been fortunate enough to reach the summit at an early hour, we were able by noontime to continue on to the northward. We followed the very top of the wall which connects the main peak with its northern neighbors, the Black Kaweahs, with the deep abyss of the Kaweah Basin far below on our right, and on the left the sloping talus pile stretching down towards the cañon of the Big Arroyo. After a mile or two of this lofty rock-work, our further progress was cut off by the buttress-like flanks of the next Kaweah peak, which left us a choice of climbing or skirting it to the westward. We chose to follow the latter course, and descended the long slopes that stretched down towards the Big Arroyo. If there is anything in the mountains which could make the city streets seem agreeable luxuries, it is this kind of climbing—or, rather, descending. The stones were too small to be trusted and too large to be ignored, so that one could neither leap boldly from rock to rock, nor simply slide at random. No, it was a case of perpetual watchfulness, of balancing and preparation for action when the trusted foothold turned traitor and threatened to deposit the unwary one upon neighbors, which doubtless had their share of interest for the geologist, but utterly lacked attraction as reclining places. Add to these pleasures the additional complications of knapsacks which insisted upon deserting their proper positions and climbing upon the back of one's head, with a resulting disturbance of the center of gravity. Yet in spite of it all, the west slope of the Kaweahs seems a remarkably delightful place—from this distance.

As the afternoon wore on, we made further progress towards the Big Arroyo, always skirting around towards the north as much as was possible, keeping well above the timber line, and crossing numerous snow-fed streams which flowed down from the mountain flanks towards the arroyo. Not long after the sun had disappeared behind the ramparts of the Great Western Divide, we reached a cluster of tamaracks—a distantly spied objective point. These trees seemed a group of outposts, bolder than their kinsmen below on the floor of the arroyo, who had established themselves far in the land of rock and snow. At all events, they were most welcome, and gladly we went to work upon our supper fire, whose building required no little ingenuity, for a recent rain had drenched all available fire-wood.

Supper eaten, we spread our sleeping-bags near the fire, and before the last glow had left the western sky were far away in the land of dreams, climbing fairy mountains.

If the night was cold, the morning was colder. First daylight, at ten thousand feet altitude, in an exposed camping-place is no time for loafing. Once mentally persuaded that it will be more comfortable to get up and "hustle" than to lie shivering in the sleeping-bags, there is no other way but to get the fire started and the coffee boiling—and the quicker the better! In civilization we are sometimes told that coffee is bad for us. Would that the critics could be present at such times as these morning awakenings to watch us while they contentedly sip their cold water!

The upper reaches of the Big Arroyo lay before us—barren, glacier-swept fields of rock, here a polished, sea-like floor, there dotted with great isolated blocks or mounting upward in giant steps, as if hewn out by some colossal builder. On the right the Black Kaweahs pressed in more closely, until but a narrow chasm-like valley lay between them and the opposing walls of the Western Divide. Triple Divide Peak rose to the northwest, and from it a transverse mountain-wall brought the Big Arroyo to an abrupt end. This rock-bound cup, bare of all vegetation, hemmed in on three sides by the precipitous mountain-walls, was Nine Lake Basin. A number (presumably nine) of lakes nestled in the chilled embrace of the rock floor, fed from the snow-banks that gleamed on every side, and these were wonderfully colored with ever-changing hues as we skirted them — deep purple blues, pure tones of the reflected sky, greens dark as ocean green, and browns as rich as they were unexplainable.

But soon we abandoned our enjoyment of the scene and concentrated our attention upon the task of finding a way across the divide into the Kern-Kaweah country. Apparently there were three possible methods of scaling the wall that lay before us, rising some two thousand feet, and after considerable discussion, we chose the middle possibility, a chimney which reached the top at what appeared its lowest point. That was a thoroughly delectable chimney—for a few minutes. Then it petered out into a narrow slide cut in the surrounding rock, and covered with gravel and débris barely sticking at the angle of rest, and ready to form innumerable miniature land-slides as our feet disturbed the general equilibrium. So we gave up the chimney and took to rock-work on its flanks. For two hours we labored upward, often retracing our steps when a false move had brought us to impassible places, and always hampered by the condition of the rock, which was extremely rotten and untrustworthy.

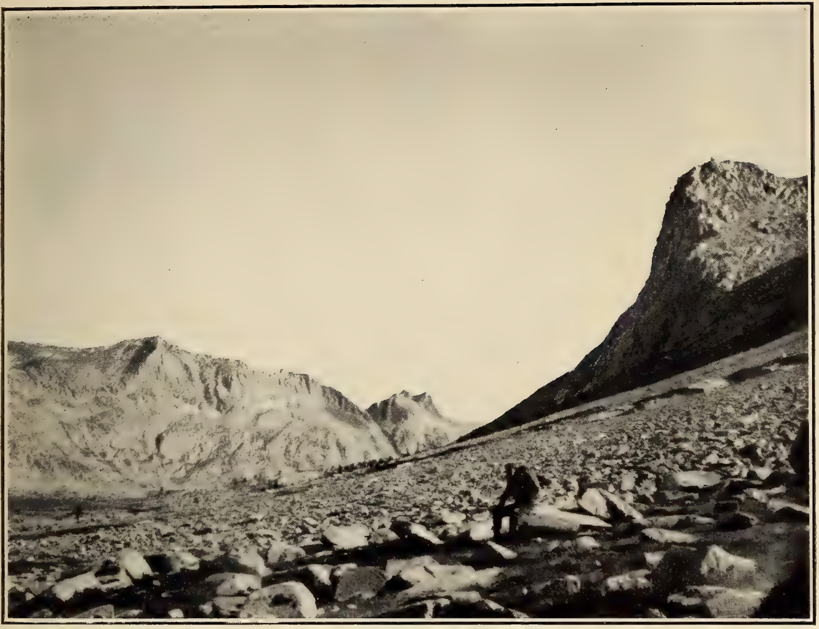
Finally, however, we gained the summit and were doubly rewarded; first, by the magnificent view, and, secondly, by the discovery that our fears of a precipitous drop on the other side were ungrounded, for a snow-slide offered means of descent. Incidentally, we later discovered that the route chosen was the only possible one, for at no other place on the Kern-Kaweah side of the divide was there any chance whatever for descent. The view was truly inspiring, and probably doubly appreciated because of the difficulty attending its enjoyment. Below us, to the west, lay Nine Lake Basin, now darkly shadowed, and stretching away from it to the south the deep-cut cañon of the Big Arroyo; over the strangely fashioned skyline of the Great Western Divide we caught glimpses of the wooded country beyond and, farther yet, of the hazy reaches of the San Joaquin Valley. The valley of the Kern-Kaweah stretched towards the east, at first a broad, seemingly almost level field of rock, dotted with tiny lakes and patches of snow, and in the distance narrowing into a more distinct cañon. Beyond was the endless sea of snow-capped peaks, with Whitney and its neighbors rising loftily, and above all was the California sky of delicate blue. Altogether a wondrous view and long to be remembered.

After building a cairn at the top of the pass we commenced our descent and coasted down. The half mile of snow vanished astern with marvelous and not always comforting rapidity, for the laws of gravitation prosper mightily under such circumstances, and forthwith we found ourselves upon the valley floor. What particularly impressed us with the greatness of our descent was that the valley, apparently a *level* field as viewed from the top, was in reality extremely broken up and, if properly mapped, worthy of many contour lines.

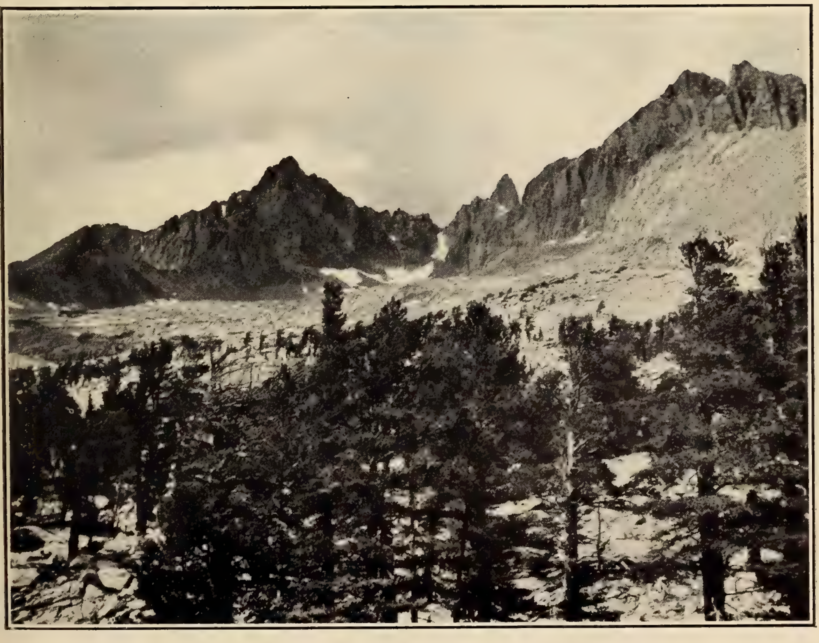
All exploration of country unfamiliar to the wayfarer has its fascination, but there is something particularly attractive in gaining acquaintance with an unknown stream at its source, and thence proceeding with it to its outlet. That is what we did with the Kern-Kaweah. To be sure, a river should be followed from source to sea, but in this instance we saw our stream only from its birth in the mountain snow-banks to its adoption by the larger Kern. First it meandered through the cold rock wastes, delving into snow-fields and emerged reinforced on the far side; then it gained strength and rushed down a rocky gorge, finally coming to the land of vegetation; now it rested in quiet pools, or flowed peacefully beneath the overshadowing tamarack; now it leaped over a fall, or plunged through encompassing cañon walls. It is a wonderfully versatile stream, this Kern-Kaweah, and in miniature possesses all the scenic features attainable by flowing water. Moreover, its surroundings are truly magnificent. Indeed, we were agreed that for rough grandeur and general charm this seldom-mentioned cañon far surpassed anything we had encountered on the trip. It has its pleasant meadows, its stately tamaracks; its walls are massive, steep rising, ofttimes as impressive as are those of Hetch-Hetchy, to the author's mind, and down from them come occasional waterfalls and cascades of rare beauty. With all, a cañon well worthy of exploration by visitors to the Upper Kern country.

That night we made our camp under the tamaracks by the side of the water, and watched the flaming sunset framed by the cañon walls, and again in the morning saw it rise as brilliantly, now making gorgeous the eastern and lower end of the cañon, which lay before us.

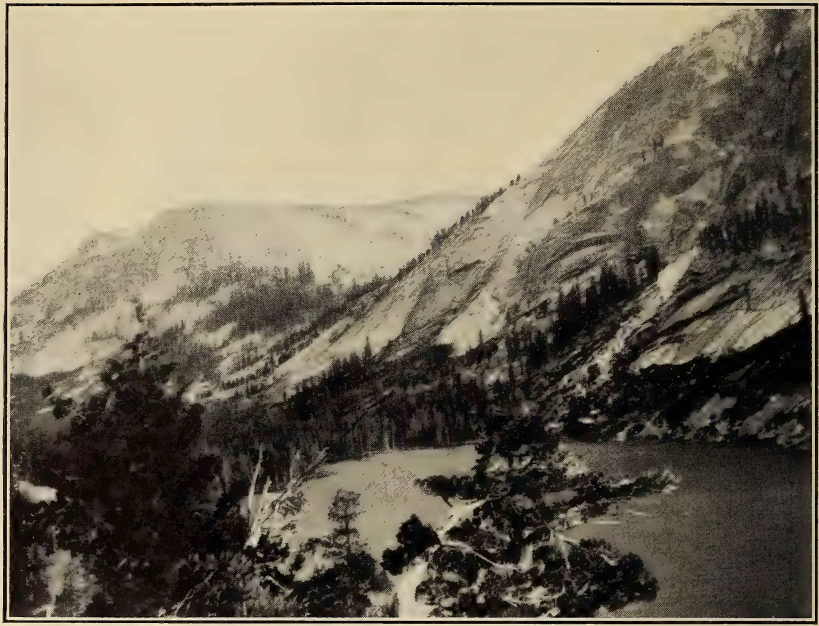
And in a leisurely way we roused ourselves and made the six remaining miles to Junction Meadow, arriving there at noon. Our "grub" was gone, so from each Sierra member we begged a morsel, thus fortifying ourselves until the eagerly anticipated arrival of the commissary.



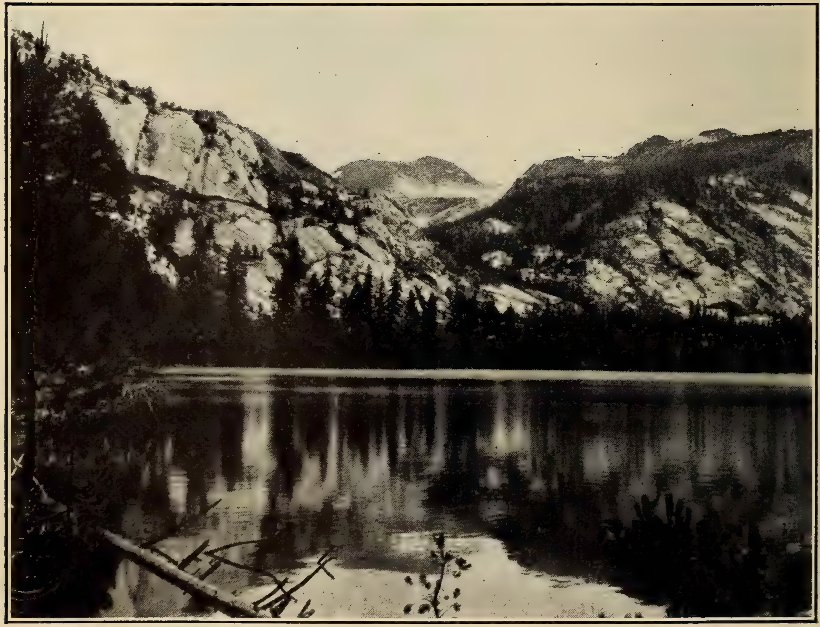
LOOKING DOWN KERN-KAWEAH VALLEY.
From photograph by Ralph Dyer, 1908.



THE BLACK KAWEAH.
From photograph by C. W. Pohlmann, 1908.



LAKE WASHBURN.
From photograph by Mary Randall, 1907.



LAKE MERCED.
From photograph by Dr. Edward Gray, 1907.

AN AUGUST OUTING IN THE UPPER MERCED CAÑON.

By S. L. Foster.

Looking for inspiration for an unusual, easy two-weeks' trip into the Sierras, I found it in two articles in the Sierra Club Bulletin. The first was entitled "From Tuolumne Meadows to Yosemite Valley by Tuolumne Pass," on page 314 of the Bulletin of June, 1905, and the second "The Grand Cañons of the Tuolumne and the Merced," on page 235 of the Bulletin for January, 1908. After reading these I spent my vacation very pleasantly during August, 1908, in the Merced Cañon from just below Washburn Lake to the Yosemite Valley.

In the first article there appears on page 316 the following: "We skirted the north shore of Lake Merced to its outlet and followed the river into Lost Valley and to where the Merced goes into the gorge of Little Yosemite. Further progress by the river seemed impossible. . . ." In the second article, on page 236, there appears the following: "Lying only a few miles above Little Yosemite, it (the Merced Cañon) is rarely visited, as the cañon becomes almost impassable a couple of miles below Lake Merced. Between the rocky shoulder just below Lake Merced and the wall of granite that now shuts the cañon off from Little Yosemite lies Lost Valley. . . ."

Relative to those two statements, I wish to throw a little light from my own excursion through the "impassable" part of the cañon, taking the matter up under three heads,—Lost Valley, cañon from Lake Merced to Little Yosemite Valley, impossibility of progress by the river from Lost Valley into Little Yosemite,—as I think the statements may unnecessarily deter prospective trampers from an easy and interesting trip. The difficulties described were the attractions for me.

Lost Valley does not appear on the latest U. S. geological map. Neither did the Yosemite Indian guide who piloted me and my goods to the top of the ridge overlooking Merced Cañon, nor two guides whom I found equipped with Professor Le Conte's map of the region and camping with their clients at Merced Lake, have any knowledge of the location of this valley. In the cañon at the outlet of Echo Creek, about three miles west of Merced Lake, there is one of those combinations characteristic of the Merced Cañon and consisting of meadows filled with pine trees. This valley extends for half a mile or so toward Merced Lake, but I do not think this is Lost Valley. About four miles west of Echo Creek there is a bit of a valley at the foot of a beautiful "silver apron" about two hundred feet long by thirty feet wide, preceded by a six-foot waterfall and followed by an "emerald pool" about one hundred feet across. This valley has what could be technically called an island at its lower or river side, as part of the river goes around one side and a much less part goes around the other side. It has meadows and forest also and just precedes the gorge into Little Yosemite. This I guessed was Lost Valley, but it might as well be settled by reference to whomever first applied the name.

As to the difficulty of getting from Merced Lake to Little Yosemite Valley, I would state that it took me about five hours of actual walking along fair going to make the trip between these two points, making the distance the equivalent of about ten miles. The way from Merced Lake to Echo Creek on the north side of the river and up 2,500 feet to the sunrise trail is as easy and plain as a wagon-road now, as a good, well-patronized trail exists between these places. It appears on the late Lyell U. S. geological quadrangle and has existed, according to my Indian guide, for "four or five years." From Echo Creek it is useless to proceed down the cañon on the north side of the river, as the way is practical for but a short distance; it is not pleasantly so that far and the river cannot be easily crossed except by swimming when the way becomes impassable. By fording the river, however, at a point on the dividing-line between the timber and the granite and just at the western limit of the dead water in the river west of Echo Creek outlet, a well "duc"* rocked old sheep-trail can be easily picked out on the south side leading down to Clark Cañon.

Immediately beyond here the projecting spur forces one again through obstructive and retentive brush and uncertain, rocky going to the river and another waist-high ford in the swift river above the falls referred to in what I think is Lost Valley. Another practical, though more hazardous crossing here is over the swifter water of the "silver apron," or one could swim the pool. I used all three routes while camping in Lost Valley.

As to the passage from Lost Valley to Little Yosemite being impossible, I did not find it so. No one who has essayed the trip down the Grand Cañon of the Tuolumne balks at the Muir Gorge, which certainly appears to be and is very impassable. The tramper goes around it, and with less effort he can go around the Little Yosemite entrance gorge and still continue to follow the cañon.

From Lost Valley I found four ways over into Little Yosemite. There are two on the south side, of which one is the better, being a seven-foot leap between boulders, with a ten-foot "run" and a "take-off" three feet higher in elevation than the landing-place. Any athlete will pronounce these jumping conditions easy, but as the landing-place is a smooth spherical boulder with a boiling "pot hole" on each side and the twenty-foot falls of the gorge into Little Yosemite about thirty feet away, it loses in attractiveness somewhat upon careful study when one is alone.

I made the jump over barefoot and swam back through the "pot hole" at the head of the falls, but found an easier way than doing this two or three times for my various packages, as I did not dare to venture all my belongings on a single leap with those two hungry "pot holes" lashing themselves into foaming eddies so near. The possibility of catching a cramp in one of my cold journeys across the lower swirling pool was always in view, while jumping back across the roaring stream seven feet horizontally and three feet vertically, with little or no "run," was beyond my skill. If there had been two in the party, one to pitch and one to catch, this would have been an easy passageway.

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* Criticism is invited on this spelling. The author submits it as from the Latin *ducere*—to lead. The editor that it is from the boy's game of duck on the rock and should be spelled accordingly. Comment is invited. —EDITOR.

I tried to bridge this bad link in the trail and found a suitable drift log a few hundred yards away, but it weighed about two hundred pounds, and I soon tired of the effort of carrying it on the uncertain footing. Then I sought the river's help, but the log promptly lodged among the boulders of the rapids. I freed it once at considerable risk when it stuck at the brink of a waterfall entirely inaccessible to me.

The other trail on the south side, looking like a way that a bear or deer would choose, after a waist-high ford through rapids at the outlet of Lost Valley, goes high up over the spur through loose granite slabs and considerable brush. I later found that these south outlets would both have led me safely into Little Yosemite, but I followed neither.

On the north side I found two ways through, one the better and the best of the four. Some pioneer had marked out a route by recent "duc" rocks through the talus and brush high up near the line dividing the foot of the dome from the brush. This way is feasible by an expenditure of some lost cuticle, considerable ruined raiment, rather much ill-temper, and a superfluity of exertion, and I followed it; but would not do so again, as it obliges one to fight two long stretches of virgin brush about shoulder high, besides some large boulders.

The trail that I would advise would lead from Lost Valley along the stepping-stones in the bed of the shallow branch of the river on the north side of the island to the heavy talus at the end of the valley. Through or around this first obstruction the way is easy, over piles of drift-wood to the stones at the edge of the river again and along to a second wall of enormous granite blocks. Here the pioneer has "duc" rocked his trail high up through the brush, as explained, but I found by moving a few boulders I could contrive a passage under the great rocks about three or four feet high by six or eight feet wide, easily passable on hands and knees and leading back to the river again at the base of a triple falls, thus avoiding practically all the brush and talus gymnastics and expletives. From this point, by making wise use of the crevices in the granite and walking slowly and cautiously on the dry moss-covered and decomposed rock surfaces, one can rapidly work one's way down to a view of the jump passage referred to and to the entrance to the gorge.

Leaving the gorge, one can ascend the spur by the same careful tactics to meet the pioneer's "duc" rocks which lead safely and quickly down alongside another magnificent "silver apron" and "emerald pool" into Little Yosemite. There is a climb here of about fifty feet, as against five hundred feet, as I remember it, at Muir Gorge in the Tuolumne Cañon.

Part way down the Little Yosemite a third long, wide "silver apron" is met, any one of the three far surpassing in extent and beauty the one in Yosemite Valley proper.

From Merced Lake to Little Yosemite the river makes an almost continuous succession of "silver aprons," rapids, cascades, "staircase falls," "pot holes," etc., as it rushes along in its deep glacier-worn bed. It is guarded by lofty granite domes on either side, rising to Clark Mountain, 11,500 feet, near by, and relieved by pretty groves of quivering aspens and pines.

If any one should find difficulty from unwillingness or conditions in the outlined passage from Lost Valley to Little Yosemite, it is only a 400- or 500-foot climb up the north sloping brush-covered wall of the cañon. A good deer trail leads up from the oak-tree sheltered "deer yard" in the upper part of the valley over the saddle either into Little Yosemite itself or to Sunrise Trail and out at Nevada Falls. One hour's leisurely climb sufficed to carry me from Lost Valley to the top of the north dome overlooking the gorge at the entrance to Little Yosemite, and I "duc" rocked the upper part of the trail where there were stones for "ducs" and boulders to crown. The deer tracks, however, are clear enough marks for any one to follow.

In the article last referred to, on page 237, appears the following: "We did not regret the extra work, however, for in making our way up the southern bank of the river above the lake (Washburn) we found a soda spring."

In looking for that spring I walked from my Echo Creek camp up the cañon beyond Merced Lake and beyond where the main trail crosses the river, but not to Washburn Lake. My day's outward tramping time-limit — noon — had nearly expired when, two hours' walk from Merced Lake and after crossing a cluster of three brooks on the north side of the river and before reaching a "silver apron" about one hundred feet wide and two hundred feet long, I found soda springs on both sides of the river. Those on the south side were flowing bountifully, but those on the north side were nearly dry in August. These springs were right alongside the river, were easily noted from the wide areas of rusty red deposit about them, as in Tuolumne Meadows, and their waters tasted about the same as that of the soda springs in Tuolumne Meadows.

If the report above referred to in the BULLETIN for January, 1908, and a similar one on page 292 of the BULLETIN for June, 1908, are not in error, there are soda springs both above and below Washburn Lake in the cañon.

I would venture to predict that this upper Merced Cañon, between Echo Creek and Washburn Lake, would prove a popular substitute for the campers when driven out of the fine camping-grounds at Lake Eleanor and in Hetch-Hetchy Valley. The scenery, pasturage, and fishing in the cañon are all attractive, the accessibility only is less.

An unburdened, ambitious athlete, ready to wade, swim, or jump, could make the trip from Merced Lake to the Yosemite Valley via the cañon in one day easily, as it is practically downhill all the way.* In this short trip, counting the charms of Yosemite, he would feast his eyes on mountain views of water, rock, and forest effects the equal of which can probably not be found in any other one day's course in the park, even in the royal Tuolumne Cañon trip itself.

I had a guide and three animals carry me and my twenty-five-pound ten-day outfit of bed and knapsack from Yosemite Valley up to the top of the ridge on the trail leading down into the Merced Cañon near Sunrise Mountain at about 9,100 feet elevation.

From here I spent nine days alone, loafing, fishing, reconnoitering, etc., down to the stage again in Yosemite Valley, and I had a delightfully comfortable, exhilarating, restful time, thrilling with the joy of living in that succession of perfect California Sierra sunny days and moonlit nights among such congenial and harmonious surroundings.

I saw five deer, numerous coveys of mountain quail, one grouse, and two coyotes, but no bears, mountain lions, or rattlesnakes, and I readily caught the few trout that I wanted to complete my Sierra menu. I experienced more pretty touches of Nature than my space permits me to describe.

One morning at Echo Creek at daybreak I rose on my elbow in my sleeping-bag and in choice and emphatic English told Mr. Gray Squirrel what I thought of him for helping himself to my cold corn-meal mush, as I found him coolly doing ten feet away at my fireless fireplace. He departed with an air of injured dignity. I woke up one night just in time to hear the sharp clicks of a departing deer's dainty hoofs on the granite near my flood sand-bed, sounding like a boy's wooden stilts on the concrete sidewalk, though sharper and more trippingly. Another night I was abruptly startled from sleep, and listened in the starlight with great interest to an unusual bird's call from the pine-tree immediately over my head. It was my first experience with this note, and the musical and plaintive, rather than mournful, slowly voiced, soft, yearning "Oo-oo, t'wáh-ee. Oó-oo, oó-oo," sounded novel and weird in the lonesome darkness, being so near and loud and so distinct and earnest. It was answered from a distance by the mate, and after three eager calls from the unseen lover and three calm responses, a great owl swept from his perch above me and rapidly and noiselessly vanished down the dim aisles of the tree-tops.

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* The writer of the article of the BULLETIN of June, 1905, states that his trip was made in July, 1904, a month earlier than the present writer's; so that the stage of the water might account for the different conclusions. He adds that he was not so ready at swimming in the Merced River. —EDITOR.

I saw tracks of bears, lions, coons, and rattlesnakes. I watched the trout in the "emerald pools" in Lost Valley and in Little Yosemite jump five or six feet upwards into the white water of the "silver aprons" in their efforts to climb to some fancied better abode, only to be swept back after a few seconds of hopeless wriggling along on the smooth granite. I listened to the booming of "heaven's artillery" as it crashed and roared overhead in two cracking though brief old-fashioned thunder-storms.

I studied animated twigs moving along on the river bottom, and saw chipmunks climb about on the vertical faces of the decomposed granite cliffs like spiders. I was excitedly inspected, as usual, by the ants at each new camp, criticised by the grosbeaks, scolded by the jays and squirrels, and robbed by the yellow-jackets, who came as unbidden guests to all my meals. These last-named rustics invariably ordered trout, and, though contrary to the rules in all well-regulated summer resorts that no food may be taken from the table by the guests, these cañon visitors when served promptly decamped with the viands for some storehouse elsewhere or a hungry brood at home. Sometimes I felt that I had more company up in the mountains than I had in the city, and that I had come to the wrong place for the rest cure.

I enjoyed three delicious fresh vegetable salads, and eagerly devoured several mouthfuls of strawberries, black raspberries, thimbleberries, elderberries, gooseberries, and chokecherries. I saw many flowers that looked charmingly sweet and pretty in their unexpected little colonies amid discouraging surroundings—crimson pentstemons, yellow snapdragons, red tigerlilies, black-eyed Susans, purple primroses, white wood violets, pink and blue morning-glories, etc.

It was certainly a very interesting trip for an observing city man, who is not consumed with ambition to climb to the top of everything and who likes to commune quietly with Nature alone and in his own way.

Of course, the same facilities that permit a tramper to follow the cañon from Merced Lake to Yosemite Valley permit the return trip. Animals could go and have gone from Yosemite Valley nearly to the gorge at the eastern end of Little Yosemite, and they could go from Merced Lake to Clark Cañon, but not between Clark Cañon and Little Yosemite gorge. A bridge in Lost Valley and a little trail-building on both sides would open up the cañon to pack-animals beautifully, save the present steep climb via Sunrise trail, and provide additional pictures of interest for sightseeing wanderers and havens for campers. Possibly, it would be better to keep the trail entirely on the south side when passing Lost Valley and locate the bridge or ford in Little Yosemite.

It might then be possible to make the round trip on horseback from Yosemite Valley (4,000 feet) to Merced Lake (7,200 feet) and return in one day, with no more difficulty than the round-trip is now made to Clouds Rest (9,925 feet) and return on the same day. In the course of the Club outing of 1909 to Tuolumne Meadows it might be practicable for some of the Club's experts to verify any of the information contained in this article that is new or in doubt, as I went as a pleasure-seeker and not as a locating engineer of mountain trails. After their report it might some day be in order for the Club to make a recommendation to the Department of the Interior on the subject.

I omitted to state that the sheep trail that I followed on the south side of the river from Echo Creek west extends to the east of Echo Creek, as I noticed plain blazes on the trees in that direction, but did not follow the trail to the east of the creek on the south side of the river. Upon further investigation a better ford than the one that I used may be found to the east of Echo Creek.

In any case, I feel that it is now established that the Merced Cañon from Merced Lake to Yosemite Valley was easily passable in August, 1908, for a man on foot and would probably be so in August of other years for one who finds himself in the upper Merced Cañon and is looking for a clean, cool, convenient, and interesting way out to Yosemite Valley.

San Francisco, California, September 8, 1908.

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REPORTS.

REPORT CONCERNING TROUT OF KERN RIVER REGION, CALIFORNIA.

SAN FRANCISCO, August 10, 1908.

HONORABLE BOARD OF CALIFORNIA FISH COMMISSIONERS, Merchants Exchange Building, San Francisco, Cal.

Gentlemen: On June 17, 1908, your Honorable Board granted me a permit to take and transplant golden trout in the vicinity of Mount Whitney. I beg to submit this, my report, concerning such transplanting, and also venture to make general suggestions, which I deem for the best interests of the fish in that region.

At our own expense, the Outing Party which visited the Kern River and vicinity was provided with two of the ten-gallon Buhl cans, with air holes in covers, to use in connection with the transplanting.

First Planting of Golden Trout.—On July 7 we were camped at the head of Long Meadow on Golden Trout Creek, and with the assistance of a dozen or more members of the party we caught with hook and line, in a very few minutes, on a limited stretch of the stream in Long Meadow, about 110 golden trout, averaging from four to six inches in length. These were divided between the two cans. I started out with two pack horses and two packers to take this lot over rather a rough route to a lake in Rocky Basin, at the head-waters of one of the branches of Golden Trout Creek. It took about three hours of continual traveling to reach the lake, and when the fish were released only one was found to be dead, it having been too severely hooked. All the others were in splendid condition, as is attested by the fact that within five minutes after being placed in the lake we saw them leaping for flies and feeding on the innumerable water beetles and other insect life with which the lake abounds, there having been no fish living in it previous to our planting.

Second Planting of Golden Trout.—The evening of July 15 I arrived at Rock Creek in company with Mr. J. Robinson, our head packer, and his wife, who assisted us, having left Crabtree Meadows, at the base of Mount Whitney, that afternoon. We had with us the necessary pack outfit, intending to transplant trout from the head of Golden Trout Creek, taking them back to Whitney Creek, which lies at the base of Mount Whitney. I had heard that there were golden trout in Rock Creek, which is half way to Golden Trout Creek, and upon arriving that evening I ascertained this to be true, for without any difficulty I caught a beautiful specimen of the pure golden trout, and therefore decided it would be unnecessary to go on to Golden Trout Creek. The next morning we caught fifty-four golden trout, which averaged from ten to twelve inches, being nearly twice the length of the golden trout in Golden Trout Creek. These trout, as I was informed later in Visalia, were placed in Rock Creek several years ago, and have now become quite numerous. They retain their coloration and other characteristic features of the golden trout of Golden Trout Creek, and being so much larger, they afford splendid fishing. Fifty-four trout were placed in an unnamed lake at the head of one of the branches of Rock Creek, in which there were no fish previously. This lake abounded in insect life, and there were numerous frogs and pollywogs, as in the case of the lake where the first planting occurred. Though the fish were of very large size, it being impossible to get small ones, they were in splendid condition with two or three exceptions, and none dead.

Third Planting of Golden Trout.—We returned to Rock Creek in the afternoon and caught about fifty more of these large trout, which we took back with us to Crabtree Meadow and placed in Whitney Creek. All of the trout were alive and in good condition, except one which had died en route, and the next morning, as we came down through the Meadow, on our way back to the Kern River, we saw half a dozen of these beautiful large fish swimming in the stream where we had placed them. Whitney Creek is very similar in many of its characteristics to Golden Trout Creek, and ought to make a splendid home for the golden trout. There are numerous lakes through which the main stream flows, and at its head-waters. It is probably impossible for the trout to reach these lakes from the Meadows where they were planted, and it will be most desirable for some one later on to catch a few from the Meadows and transport them to the lakes, which are only a short distance away, after the trout have multiplied. Many of these large trout appeared to be about ready to spawn, and if this is the case there ought to be plenty of trout in Whitney Creek in a very short time.

Fourth Planting—Kern River Trout.—On July 11th, under the direction of Professor W. C. Morgan of the University of California, and assisted by several of the fishermen of the party, sixty Kern River trout of six or eight inches in length were caught in the Kern River near its junction with the Big Arroyo and placed in a cracker box with slits cut in it, and anchored in the river over night. The next morning about thirty more, making ninety-three altogether, were added to these, and they were placed in the cans and taken over a very steep trail to Moraine Lake on the Chagoopa Plateau, near the base of Kaweah Peak. The trail was so rough that the pack train had to be stopped twice on account of pack animals falling down, and eleven of the fish were found dead upon reaching Moraine Lake. The remainder were in fine condition and were seen swimming about in schools for some time after they were planted. Since Moraine Lake is a favorite camping ground for those who visit the Kern River and climb Mt. Kaweah, it is to be hoped that this planting will result in success, as Moraine Lake is of quite considerable size, and will afford splendid fishing.

Suggestions for Protection and Preservation of Golden Trout. —I ascertained from members of our party that they had seen campers fishing in Golden Trout Creek above the falls, before my arrival to take charge of the planting. These campers had moved on, and I saw none of the illegal fishing myself. I notified all the members of our party to warn any one against fishing in this stream. Other members of our party who went over to the South Fork of the Kern saw persons fishing in that stream, and it seems to be the general idea among campers and cattle men in that vicinity that the law prohibiting fishing for golden trout applies only to Golden Trout Creek. I notified campers, whenever the opportunity occurred, of the fact that the law applies to any variety of golden trout wherever found, and I personally stopped fishing on Rock Creek.

The area in which the golden trout are found is so limited that it would have been well to have placed signs at different conspicuous points where trails pass, in order to inform campers of the existing law. I am sure that there are many who break the law through misinformation, who would not do so if they were made aware of its existence. It is probably too late now to accomplish much good in this direction, since the law will expire by the time next year's fishing commences. I had in mind all the time I was in that vicinity, the question of further protection of these wonderful trout. There is no question that they are very numerous in Golden Trout Creek at the present time, but the moment the law is removed fishing will commence again, and it will be an easy matter to deplete the stream, as it is only a few miles in length, and the trout are so easily caught. I would recommend that the next Legislature pass a law limiting the daily catch of golden trout to ten in number per day. This will enable tourists who pass through this region to satisfy their curiosity, and, for the present at least, will not have any serious effect on the number of the trout in the stream. This law should apply to Golden Trout Creek, Rock Creek, and Whitney Creek, as well as other streams where the *Roosevelti* variety of the golden trout may be planted. I do not know that it will be necessary to have so small a limit placed on the other varieties of golden trout in the South Fork of the Kern and Cottonwood Creek. I would also suggest that if such a law be passed, that it will be most desirable to have a number of strong cloth signs printed, setting forth in brief the law, and these should be placed in conspicuous places by nailing to trees along the trail and at stream crossings. This can easily be done and will doubtless be attended to by some interested persons in Visalia. Then no one will have the excuse that he is not correctly informed as to the law.

I would further suggest that the entire plateau or drainage area of the streams which rise along the main crest of the Sierra and flow to the west and into the Kern River Cañon be reserved for the pure variety of golden trout. (See page 30 of Dr. Evermann's report on the golden trout.) All of these streams enter the Kern River in steep cañons, up which the Kern River trout cannot ascend. They are similar in their characteristics to the Golden Trout Creek, in which the golden trout are native, and they will thus present an extensive territory in which these trout can be found and caught. There are also many lakes in some of these drainage basins, which will aid in making the fishing as fine as could be wished. We found it a comparatively easy matter to catch these trout with hook and line, and with two of these large cans, to make many successful plantings. In many places it would be possible for the camper to catch a dozen or twenty trout and carry them in a bucket of water only a short distance and place them in adjoining streams and lakes, which now have no fish.

It will be eminently desirable that the trout which we planted in Whitney Creek in Crabtree Meadow should be afforded further protection if possible. Every party which comes to climb Mt. Whitney (and parties arrive almost every day during the summer season) camps in this meadow, and these trout are so easily caught that they may be taken before they have a chance to propagate. I would suggest that some legislation be recommended protecting these trout in Whitney Creek until they have multiplied so that there will no longer be any danger of fishing out the stream. As soon as trout are placed in the lakes at the head-waters of this stream, which can be accomplished by any interested camper after the trout have increased in numbers, it will no longer be possible to catch out the fish. Hon. George H. Stewart of Visalia stated that he would secure the passage of an ordinance by the Board of Supervisors of Tulare County, preventing fishing in Whitney Creek for the desired length of time, and this will doubtless aid in accomplishing the results desired.

General Remarks.—We found the trout in Kern River to be as plentiful as ever—in fact, too plentiful to afford the most attractive fishing for the sportsman. It was easy for an expert to catch the limit in three or four hours. I was informed by members of our party that there were two camps of fishermen near Kern Lake that were making a habit of smoking trout, and upon inquiry I found that it was the general impression among campers and cattle men that the law only prohibited a person from catching more than fifty trout in one day, but that he might repeat this day after day, and smoke whatever trout he might have left over after each day's catch, thus being able to pack out as many dried and smoked fish as he desired. If the law is otherwise, as I assume, and a person is only allowed to have fifty trout in his possession at any one time, whether smoked or fresh, I would suggest that this matter be given some publicity in this region, and that the smoking of trout in such large numbers be stopped in the future, as I understand it is a common occurrence every year.

Taking into consideration the variety of trout to be found in the Kern River region, and their great number, it undoubtedly affords the best trout fishing in the world. We were particularly pleased to find that the golden trout would grow to such large size and yet retain their remarkable coloration. With their wonderful golden red color and their great strength, they make the most beautiful and spectacular game fish that we have, and every means should be taken to protect them until they shall have been planted in a sufficient number of streams and lakes to make it impossible to decrease their number to any appreciable extent. Respectfully submitted,

Wm. E. Colby,

Secretary of Sierra Club, *and Deputy Fish Commissioner.*

San Francisco, Cal., August 25, 1908.

Mr. William E. Colby, Secretary Sierra Club, 302 Mills Building, City.

My Dear Mr. Colby: I want to thank you on behalf of this Board as well as myself, for your very interesting report of

August 13 concerning the trout in the Kern River section and the good work done by you on your recent trip to that region. I have been away from the city, or would have acknowledged it earlier; besides which I sent it to Mr. M. J. Connell, our new member in Los Angeles, who is a thorough sportsman and has fished and hunted not only throughout the United States, but in all the good hunting and fishing sections of the world.

There are some excellent suggestions in this report that will have the attention and consideration of the Board. I believe that this report is worthy of a place in our Biennial Report, which will come out some time this fall. I think that yourself and the Club are entitled to have your good work known to the people, not only of this State, but the United States.

Yours respectfully, CHAS. A. VOGELSANG,
Chief Deputy.

VISALIA, CAL., August 29, 1908.

MR. WM. E. COLBY, San Francisco, Cal.

My Dear Mr. Colby: I received two days ago a reply to my letter of inquiry regarding the planting of golden trout in Rock Creek. The same is from M. W. Buffington, County Surveyor of Kern County, California.

He informs me that on or about August 1, 1900, he and James Reynolds of Lone Pine, M. Reynolds of Ventura, R. N. Heyn of Pasadena, Charles Blacker and William Silver of Bakersfield, and a Swede or Norwegian, name unknown and now deceased, caught twenty-one trout in the upper meadow through which Volcano Creek runs, and placed back in the water all that were over four inches long.

Mr. Buffington and Mr. Heyn each took seven of the trout in a small lard pail and rode as fast as possible to Rock Creek, occasionally stirring the water, and changing three times when passing springs. When about half way between the summit and Rock Creek they turned three trout loose in a tributary of Rock Creek, and the rest (eleven) were carried to the trail crossing on the creek, where they were placd in the water "with some show of ceremony."

In 1906 two of the party, James Reynolds and R. N. Heyn, caught some fine large golden trout at the same place.

I was much pleased with your excellent report of the planting of golden and rainbow trout by yourself and others. I think all the lakes and streams of that region of high altitude, east of the Kern, should be planted with golden trout. In a few years all of those bodies of water would become well populated. I believe the golden trout would do better there than species brought from a distance—and they have no equals.

I will report your work and Mr. Buffington's to the Bureau of Fisheries in Washington.

Can you, at some time, give the names of all the members of the party who assisted in the planting done by you? The Government desires the names for their records.

Very truly yours, GEO. W. STEWART.

SAN FRANCISCO, September 1, 1908.

PRESIDENT DAVID STARR JORDAN, Stanford University, Cal.

My Dear Dr. Jordan: I am enclosing herewith a copy of report made recently to the State Fish Commission, which I thought would prove of interest to you. I am also sending you copy of letter just received from Major Stewart of Visalia, indicating that my inference was correct, and that the *Roosevelti* variety of golden trout were planted in Rock Creek. I made a careful examination of the fish from Rock Creek, though I did not have any description of the *Roosevelti* variety at hand to compare with. The only possible change which has taken place as far as my observation goes, is that there are very fine black spots extending further along the back and well up past the dorsal fin than is the case of the golden trout of Golden Trout Creek. These dots are small and not particularly numerous. The large size of the trout is probably due to the fact that as yet there are comparatively few fish in the stream, and, as in case of trout planted in lakes, where there have been no fish previously, they grow to large size for the first few years, and then gradually diminish in size as their numbers increase until they acquire a uniform size, which probably is determined by the particular environment. The trout in Rock Creek will probably increase in numbers if protected, and eventually become smaller until they are like the average of the trout in Golden Trout Creek.

I wish to record for your information another interesting fact in the trout line, which I am not sure has been called to your attention. I caught a number of trout in the Kern River near Junction Meadows and up toward the falls of the Kern-Kaweah in that stream. They are quite distinct from the Kern River trout. Their general color is quite dark, and they look almost as black as a black bass, as they are taken out of the water. Their size is a little larger than the golden trout. Like the golden trout, they are distinguished by the absence of scales; in fact, it appeared to me that this absence of scales was more complete and remarkable than in the case of the golden trout. Their skin had the feeling of a kid glove along the sides, and presented no perceptible appearance of scales. They had a broad stripe of dark rusty or reddish brown along the sides, and were marked in the same manner along the belly, this color taking the place of the golden color of the golden trout. Like the golden trout, they had no spots except a few large ones on the tail, and, if my memory serves me right, on the dorsal fin. The largest I caught was about ten or eleven inches in length, and appeared to be a full grown fish with evidences of age, and in shape was very similar to the large golden trout. I have thought that possibly these fish were either golden trout which had entered the Kern from Golden Trout Creek and then ascended the main Kern as far as the topography would allow, and by reason of the absence of the large amount of sunshine and color of the rocks on Golden Trout Creek had acquired this dark coloration, or perhaps, though less likely, it may have been a modification of the Kern River trout, with tendencies similar to that shown by the golden trout. I regret that I did not bring a specimen home with me, but we had not provided ourselves with any facilities for doing so, and in fact I did not appreciate how distinct this fish was until I got to thinking it over and had been reading more detailed descriptions of the golden trout. If you have previously heard of this Kern River fish, I wish you would let me know what you think of it. With kind regards, I remain, Very truly yours, WM. E. COLBY.

STANFORD UNIVERSITY, CALIFORNIA, September 2, 1908.

MR. WILLIAM E. COLBY, 502 Mills Building, San Francisco, California.

Dear Sir: I am very greatly interested in your letter in regard to the golden trout. I have lately heard of the occurrence of golden trout in Bubbs Creek, at the head of the King's River. It would be interesting to know whether these are the result of somebody's planting, or whether we have in this stream an additional species produced by isolation, in addition to the three already existing in the head of the Kern.

The dark fish which you have taken in Junction Meadows I have never heard of before. It is not possible without seeing them to guess as to the origin, and maybe it would be guesswork then. It is interesting to notice that so far the golden trout has held its color in different waters. It is, of course, natural that it should reach a larger size in large streams. The more they eat the bigger they get is a rule applying to all trout everywhere. Very truly yours, DAVID STARR JORDAN.

CEDAR CABIN, NORTHFORK, CAL.

My Dear Mr. Colby: It was most kind of you to think of me in connection with the report on the golden trout, and I have read the report with the greatest interest. Thank you very much.

It is the hope of both Mrs. White and myself that some day our trails may cross with that of the SIERRA CLUB.

Most sincerely, STEWART EDWARD WHITE.

September 4, 1908.

SOUTHERN PACIFIC COMPANY,
SAN FRANCISCO, CAL., September 19, 1908.
MR. W. E. COLBY, Secretary, SIERRA CLUB, 302 Mills Building,
San Francisco.

My Dear Mr. Colby: I am glad to have your letter of the 7th inst. with copy of report concerning trout of the Kern River region. It is very gratifying indeed to know that so much is being done to expand the golden trout fishing grounds. The preservation and multiplication of our game fish is a matter of the greatest importance, and I hope that the efforts which have been put forth may be attended by the highest success.

Yours truly, JAS. HORSBURGH, JR.

DEPARTMENT OF COMMERCE AND LABOR,
BUREAU OF FISHERIES,
WASHINGTON, October 14, 1908.
MR. WM. E. COLBY, 302 Mills Building, San Francisco, Cal.

My Dear Mr. Colby: I wish to thank you for your letter of September 1st, transmitting a copy of your report to the Board of California Fish Commissioners on the transplanting of the golden trout and other trout in the southern High Sierra last season. I have read this report with a great deal of interest.

I take it for granted, of course, that the stream which you call Golden Trout stream is that which is designated in my report as Volcano Creek. I am unable to locate on the map the lake in Rocky Basin in which you first planted. Can you indicate a little more definitely just how I may locate it?

I am glad to know that the trout in Rock Creek are doing well. That is a good stream, and it is interesting to know that they are growing to such good size.

The statement that *Salmo whitei* was planted in the Big Arroyo was made on the authority of Mr. Edward Hurlburt. I am glad to know that the species was not *Salmo whitei,* but *S. gilberti.*

The stocking of barren streams in this region appeals to me as one of the most interesting lines of work which the State Commission or other parties interested can engage in, and I hope that we may all see the time when all of those streams may be supplied with different species of trout. It is highly important, however, that no two species should be put in the same stream or in streams that communicate with each other. In order to keep track of the species, a single species to each stream is necessary; we could then keep track of their adaptability, changes in color, growth, etc., due to their new environment.

I congratulate you most heartily on the excellent work which you are doing, and I hope that the State and Federal Governments may continue to enforce regulations which will afford adequate protection to the interesting fishes in all these streams.

Respectfully, (Signed) BARTON W. EVERMAN.

REPORT OF THE LE CONTE MEMORIAL LODGE COMMITTEE.

During the summer of 1908 several of the needed repairs noted in our last report were made. The entrance porch floor was cemented, and a smooth pavment now replaces the loose gravel that formerly filled the porch and made the steps unsafe at times. The steps themselves have been put in perfect repair and some of the cracks in the building filled up. There is still a considerable amount of repairing to be done to the building to insure against future damage. Steps will be taken by the Committee to complete these needed repairs as they may be authorized and as funds warrant.

The hundred dollars donated by our member, Mr. James Mills of Riverside, is now being expended as he suggests for the making of eighteen fine substantial oak chairs. We are expecting a donation to buy a large oak top for the lodge table to match these chairs. An oak desk to match these chairs and the table is needed. This should not be more than thirty-four inches long. Other needs are: two curtains for store-room doors, 8 feet long, finished, and 3 feet wide; three rugs 10 feet long and 4 feet wide; a door rug 6 feet long and 3 feet wide. Framed pictures should not be over 18 inches wide. The Committee believes that $150 or $200 would complete the furnishing of the lodge in a substantial and suitable manner. Donors to this fund may specify to which of above needs they prefer their donation applied.

The complete set of *Appalachia,* donated by the Appalachian Mountain Club, has been bound and will go in with the custodian for the opening of the Lodge for the season of 1909, as also a full set of the SIERRA CLUB BULLETIN. The complete list of additions to the library are given in the custodian's report.

The growing importance of the Lodge as a source of information on the Park, for the increasing number of visitors each year is graphically shown by the report of the custodian for the season of 1908, which report the Committee takes pleasure in including, as follows:

To the Le Conte Memorial Committee.

The Le Conte Lodge was opened for the season of 1908 on May 18th.

At that time there were not many tourists in the Valley, the early travel being near its end. Most of the tourists were Eastern visitors on their way home after a winter in Southern California. These seemed particularly interested in the books, maps, etc., especially those relating to the Yosemite National Park.

During the second and third weeks after the opening, the Native Sons' Convention brought large numbers to the Lodge and furnished the largest registration for one day of the entire season, namely, eighty-five.

In June and the early part of July the registration was largely from San Francisco and cities around the bay. Later in the season there were more from Southern California and interior towns.

The chief interest of the majority of the visitors seemed to be the maps and flower collections. Many questions were asked about the Park outside the Valley by persons wishing to take extended trips. Judging by the information sought, it would seem to be almost impossible for visitors to find any correct information about trails or points of interest surrounding the Valley itself, outside a very narrow circle. The Geological Survey maps could not be obtained anywhere else than at the Lodge, and the information as to distances, etc., was so vague as to discourage any one not already in a measure familiar with the mountains from attempting even a few days' trip into the higher country.

After the third week of July the registrations steadily diminished until the time the Lodge was closed, August 18th, with a total registration of 2302.

Rose vines were planted on each side of the entrance, which, if they survive the first winter, will add much to the appearance of the Lodge.

The flower collection of 1907 was mounted and a few specimens named.

A zinc-lined box was placed in the Lodge to store the books, pictures, etc., during the closed season. This box will probably be large enough for several years, but when more room is needed the seats around the fireplace could easily be lined with zinc and fitted with hinged covers.

A great addition to the uesfulness of the Lodge would be a placard or poster setting forth the objects for which it is maintained. These posters should be placed at the various camps and at the village. At present the majority of visitors simply stumble on the Lodge, and many pass it by without noticing it at all. There is also a misleading post-card sold in the Valley, inscribed "Le Conte Memorial Chapel."

The photograph albums are worn out and shabby and should be replaced principally with views of the Park.

The following additions to the library have been made during the season of 1908: *Appalachia;* SIERRA CLUB BULLETIN; California State Board of Trade, Circular on Recession; Wild Flowers of California, Parsons, donated by the author; Manual of North American Butterflies, Maynard, donated by the author; Starvecrow Farm, Weyman, (paper); The Far Horizon, Malet, (paper).

Donations to the library of books and pamphlets relating in any way to the Yosemite National Park, or treating of the geology, botany, mineralogy, ornithology, icthyology, or zoölogy of the Sierra Nevada are particularly welcome, and would undoubtedly be of great service to many of our visitors.

The Club is indebted to:

Major H. C. Benson for kindness and courtesy to the Club representative;

Mrs. E. A. Filkins and Mrs. Paul Dickenson for "Starvecrow Farm" (Weyman) and "The Far Horizon" (Malet);

Mr. Lewis A. Aubrey, of the State Mining Bureau, for two maps of the Minaret District of Madera County;

Mrs. R. E. Bonsfield for a cash donation;

The Southern Pacific Company for two large framed photographs—one, the Kaweah Peaks, the other, Mount Shasta.

Respectfully,
MARY RANDALL, *Custodian.*

Respectfully submitted,
E. T. PARSONS, *Chairman,*
WM. F. BADÈ,
J. N. LE CONTE,
Le Conte Memorial Lodge Committee.

REPORT OF OUTING COMMITTEE—1908 OUTING

The July, 1908, Outing of the Sierra Club to the Kern River Cañon was eminently successful. The party numbered about 150, including assistants. The Kern Cañon was entered by way of Porterville, Springville (Daunt P. O.), and Nelson's. We found this route much easier than the Mineral King approach. After camping a week at the Kern Lakes the party moved up the cañon to the junction of the Kern River and the Big Arroyo, where a main camp was established. Side trips were taken to Moraine Lake and Kaweah Peak, to Mt. Whitney via Junction Meadows, and to Golden Trout Creek. Golden trout were planted in several lakes and streams hitherto without fish, and Moraine Lake was stocked with Kern River trout.

The party returned via Mineral King and Redwood Meadow to the Giant Forest, where stages were taken to Lemon Cove.

We were honored by having our President, John Muir, with us during the entire Outing, and his genial presence and instructive talks added largely to the pleasure of the trip.

The commissary and transportation problems were solved in the same satisfactory manner that has marked our recent Outings.

The one sad event of the trip was the untimely death of Miss Grace Barnett, who lost her life the day following the climb of the Kaweah Peak, by falling from a precipice in the gorge of the Big Arroyo. It occurred in the attempt to make a hazardous short cut back to the Kern Cañon, instead of taking a longer round-about route over a perfectly safe trail. Miss Barnett was one of the most loyal, enthusiastic, and entertaining members of our outing parties, and her loss brings with it a sadness that words fail to express. This is the first serious accident that has befallen any one on the Outings, and we sincerely trust that it may be the last. Every precaution had been taken to prevent accidents, and this one would not have occurred if an unnecessary hazard had not been taken.

The next Outing of the Club will be in the Yosemite National Park, during the month of July, and an entirely new trip made through the park. Leaving the Yosemite Valley, a week will be spent in the little-known but beautiful Merced Cañon above Little Yosemite; another week will be spent in the Tuolumne Meadows—that "grand central campground of the Sierra," as Muir calls it; and a third week will find us traveling by way of the Matterhorn Cañon, Pleasant Valley, Rancheria Mountain, and the wonderful region north of the Grand Cañon of the Tuolumne, into Hetch-Hetchy Valley. The fourth week in this Yosemite-like valley, and a return to El Portal will conclude one of the finest Outings that can be taken the world over. The entire expense of the trip will be about $65. The formal announcement will be issued shortly. Respectfully submitted,

WM. E. COLBY, J. N. LE CONTE, E. T. PARSONS,
Outing Committee.

NOTES AND CORRESPONDENCE.

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comment and suggestion on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, fish, forests, trails, geology, botany, etc., of the mountains, will be acceptable.

The office of the Sierra Club is Room 302 Mills Building, San Francisco, where all Club members are welcome, and where all the maps, photographs, and other records of the Club are kept.

The Club would like to secure additional copies of those numbers of the SIERRA CLUB BULLETIN *which are noted on the back of the cover of this number as being out of print, and we hope any member having extra copies will send them to the Secretary.*

MEMORIAL.

The Outing Party of the SIERRA CLUB, assembled in the Big Arroyo Camp on this eighteenth day of July, 1908, desires to express for permanent record its sense of loss and grief in the sudden death of Miss Grace Barnett on the afternoon of Monday, the thirteenth day of July.

Grace Barnett was a Western girl, a student and graduate of the University of California, and after graduation she taught in the Berkeley schools. Among students, pupils, friends, she was powerful, popular, beloved. She was eager to work, eager to help, eager to give her utmost; and always of perfect simplicity and dignity, unassuming, modest, brave.

But the Sierrans met her in her happiest moods, for Grace Barnett was a typical Sierran. Young, vigorous, gay, eager for adventure, she loved the outdoor life among the forests and mountains of her native State. She bloomed like a flower in this wilderness, vivid with life, brilliant with color, responsive to winds from the heights. She had the spirit of an explorer; she would put her foot on untrodden soil, would test the inviolate vastness of Nature in her secret and protected places, in the haunts reserved from eye and foot of man. And in this love she died, tempted too far by her joy in the wilds. Beloved of the gods, she died in her youth—swiftly, easily, joyously; died in the open air, between the lofty cliffs of the steep cañon, with the song of the Big Arroyo singing in her ears.

"If it be now, 'tis not to come." Since it was to be now, in happy youth, and not in sober middle life nor placid age, what death could be more fine, more fitting, for a daughter of the Sierras who loved the open wilderness? Her fellow-members of the Outing Party of 1908, in expressing their own deep sorrow, in extending to those most near to her their sympathy, wish to express also their reverence for the high nobility of her character, which dared even to audacity, which invoked even danger in the young ardor of her joy of life.

Resolved, That this expression of sorrow and sympathy be published in the next issue of the SIERRA CLUB BULLETIN and that a copy thereof be sent to the family of the deceased.

THE VALUE OF NATURAL SCENERY.

[Address delivered at the White House Conference on the Conservation of Natural Resources, May 14, 1908, by J. Horace McFarland, President American Civic Association.]

[This is reprinted because of its excellent presentation of a subject for which the Sierra Club stands pre-eminently.—EDITOR.]

MR. CHAIRMAN: I urge this august and influential assembly to consider the essential value of one of America's greatest resources—her unmatched natural scenery.

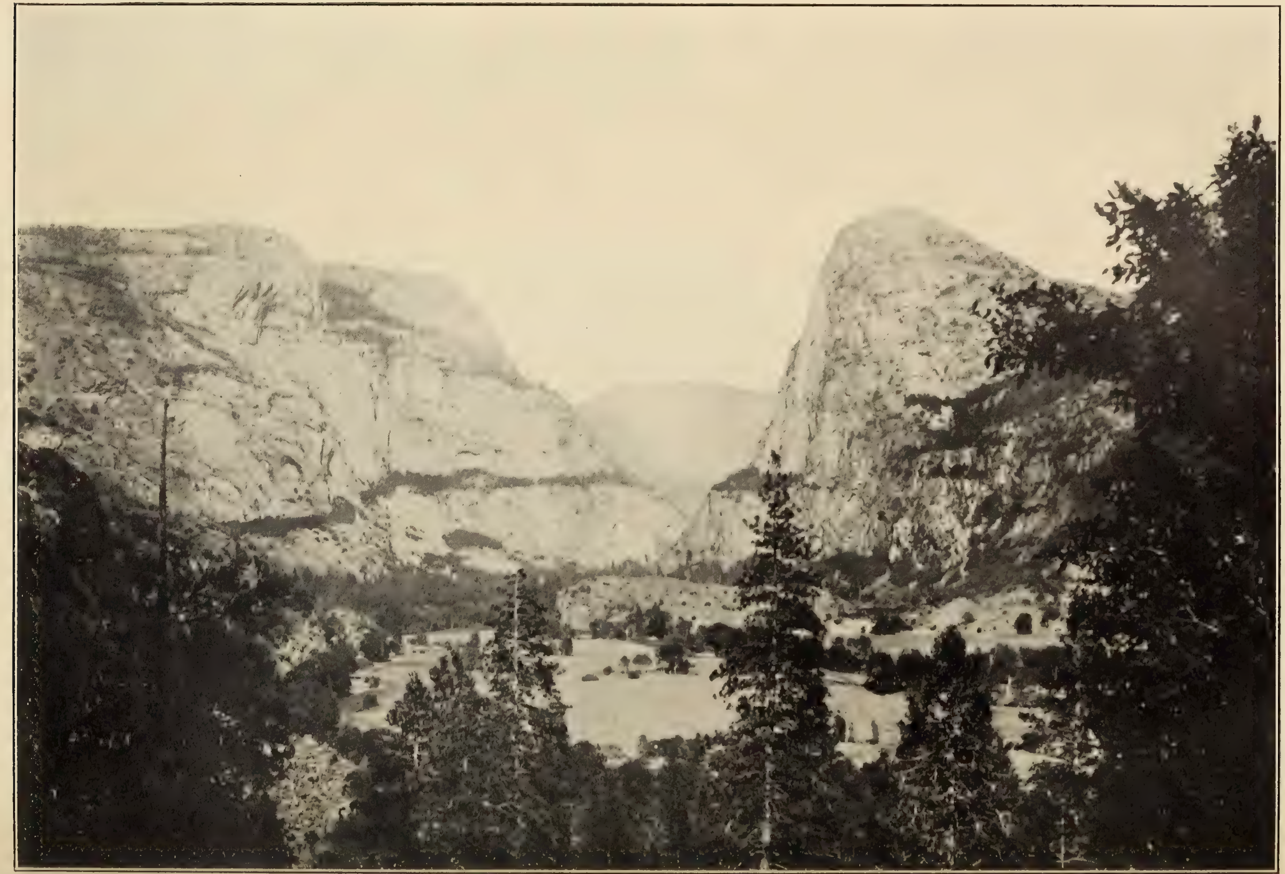
It is well that we should here take full account of the peril of our national prosperity, indeed to our very national existence, which lies in further wasteful disregard of our waning resources of forest and mine, of water and soil. By the possibilities of conservation here discussed, the mind is quickened, the imagination fired. But the glory of the United States must rest and has rested upon a firmer foundation than that of her purely material resources. It is the love of country that has lighted and that keeps glowing the holy fire of patriotism. And this love is excited, primarily, by the beauty of the country. Truly inspired is our national hymn as it sings—

"My native country, thee,
Land of the noble, free,
Thy name I love;
I love thy rocks and rills,
Thy woods and templed hills:
My heart with rapture thrills
Like that above."

Paraphrasing a recent utterance of Mayor McClellan upon city beauty, I insist that

> "The country healthy, the country wealthy, and the country wise may excite satisfaction, complaisance, and pride, but it is the country beautiful that compels and retains the love of its citizens."

We cannot destroy the scenery of our broad land, but we can utterly change its beneficial relation to our lives, and remove its stirring effect upon our love of country. We can continue to convert the fairest land the sun shines upon into a desert of ugliness. Indeed, we are abundantly able to outdo the Sahara



HETCH-HETCHY — THE TUOLUMNE YOSEMITE.
From photograph by J. N. Le Conte, 1908.

WALLS OF GRAY GRANITE RISE PRECIPITOUSLY OUT OF FLOWERY GARDENS AND GROVES.

From photograph by J. N. Le Conte, 1908.

itself in desolation, for that vast waste, so singularly like the United States in contour and extent, and once, geologists insist, as well wooded and watered as was our favored land a century ago, has somber dignity in its barrenness—a dignity completely absent from our civilized Saharas of culm-bank and ore-dump, from timber-slashing and filth-filled river.

Scenery of some sort will endure as long as sight remains. It is for us to decide whether we shall permanently retain as a valuable national asset any considerable portion of the natural scenery which is so beneficently influential upon our lives, or whether we shall continue to substitute for it the unnatural scenery of man's careless waste. Shall we gaze upon the smiling beauty of our island-dotted rivers, or look in disgust upon great open sewers, lined with careless commercial filth, and alternating between disastrous flood and painful drought? Are we to consider and hold by design the orderly beauty of the countryside, or permit unthinking commercialism to make it a horror of unnecessary disorder? Is the Grand Cañon of the Colorado to be really held as nature's great temple of scenic color, or must we see that temple punctuated and profaned by trolley poles? Shall we hold inviolate all the glories of the Yosemite, or are we to permit insidious corporate attacks upon its beauty under the guise of questionable economics? Shall the White Mountains be for us a great natural sanitarium, or shall they stand as a greater monument to our folly and neglect?

It is certain that there has been but scant thought given to scenic preservation hitherto. I remember the contempt with which a lawyer of national renown alluded to the absurdity of any legislation by Congress in preservation of scenery, when, in its wisdom, that body chose to give a measure of temporary protection to a part of Niagara's flood.

Indeed, one of the potent forces of obstruction to the legislation now demanded by the country in scant protection to the almost destroyed mountain forests of the East has expressed itself in a contemptuous sneer at national expenditures for the preservation of scenery!

We meet in a historic place, in a historic city. The Father of our Country was not only greatest in war and in statesmanship, but one of the greatest of his time in esteem of natural beauty, and in the desire to create urban beauty in what he wisely planned as the Federal City. George Washington loved dignified beauty, and the wisdom of his plan has resulted in making a national capital not only admirable in its adaptation to the public needs, but destined, as his plans are carried out, to be beautiful beyond compare.

What is the effect of the scenic beauty of Washington upon the citizens of the nation who come here? Is not their pride awakened, their patriotism quickened, their love of country increased by the dignity of man's effort for beauty here? Consider wealthy Pittsburg, busy Cincinnati, proud Chicago, with their wasteful smoke, their formless streets, their all-pervading billboards and grime—would one of these serve to stimulate love of country as the national capital?

No, the unthinking and ofttimes unnecessary ugliness of civilization does not foster patriotism, nor does it promote the health and happiness which are at the very basis of good citizenship. When, in looking over the horrors of industrial civilization, William Morris urged humanitarian effort

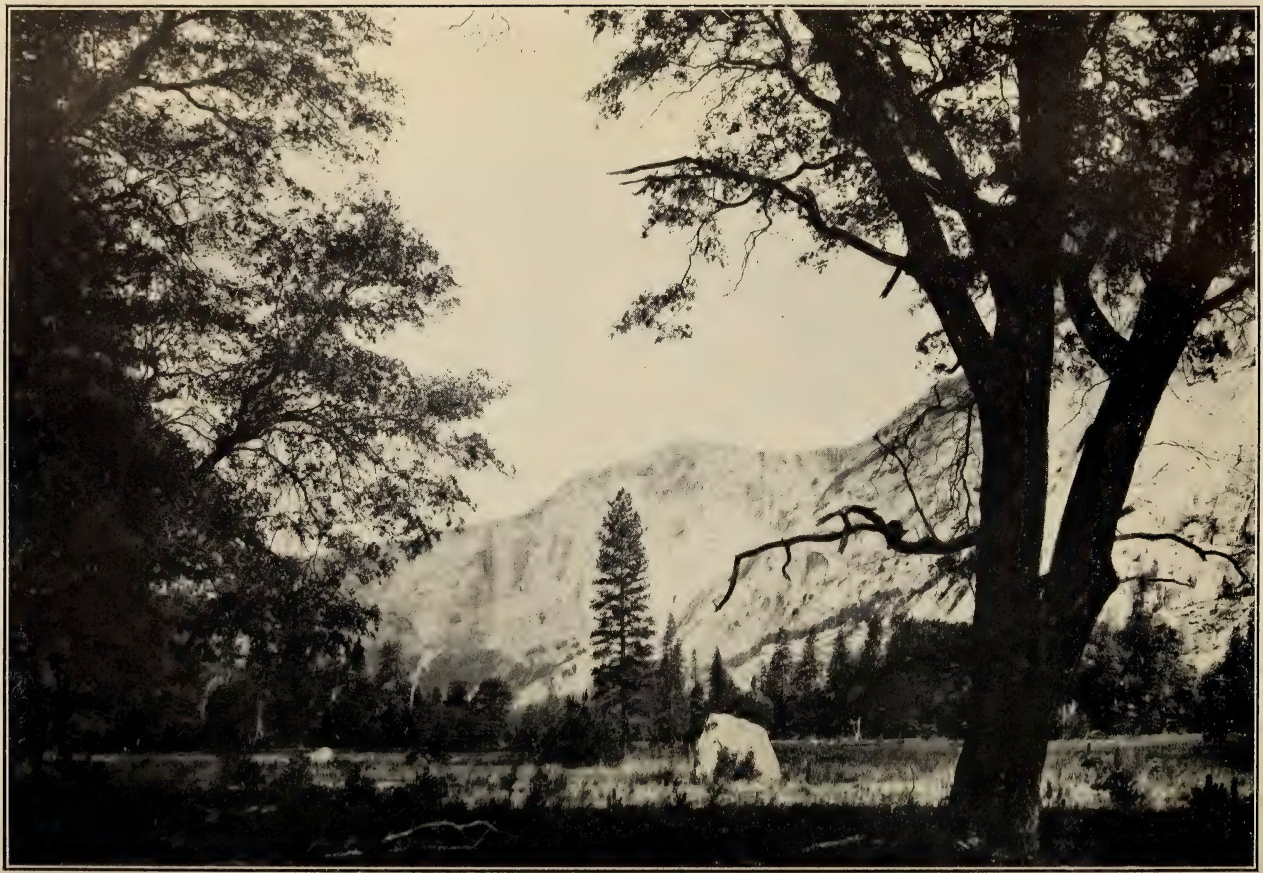
> "Until the contrast is less disgraceful between the fields where the beasts live and the streets where men live,"

he brought out a bitter truth. We have made our cities ugly, for the most part; but we are learning the basis of happy citizenship, and, while we cannot altogether make over these centers of population, we are bringing into them the scenic suggestion as well as the physical facilities of the open country, in the parks. In these parks lies the answer to the ignorant contempt for scenery to which I have alluded; for it is incontrovertible that peace and health and good order are best fostered in the parks including the most natural scenic beauties.

Mr. Chairman, there is, too, a vast economic reason for jealously guarding all of our scenic heritage in America. Visiting a quiet Canadian community on the shore of Lake Ontario a few days since, I was impressed by the number and the beauty of the summer homes there existing. Inquiry brought out the astonishing fact that they were almost exclusively owned by residents of a certain very wealthy and certainly very ugly American city, where iron is king. The iron manufacturers flee from the all-pervading ugliness they have created, and the money earned in complete disregard of the naturally fine scenic conditions about their own homes is used in buying scenic beauty in a foreign country. Perhaps a certain form of protection is here suggested!

It is authoritatively stated that the tourist travel tribute paid annually to Europe exceeds a half-billion dollars, of which vast sum America contributes a full half, getting back a far smaller sum in return travel from all the world. No one will suggest that there is travel to see ugly things, or to look upon wasted scenery, in Europe. No, this vast sum is expended almost entirely in travel to view agreeable scenic conditions, either natural or urban. The lumber king leaves the hills he has

THEIR BROWS IN THE SKY — THEIR FEET SET IN GROVES AND GAY MEADOWS.
From photograph by J. N. Le Conte, 1908.



HETCH-HETCHY VALLEY IS A GREAT LANDSCAPE GARDEN.

From photograph by J. N. Le Conte, 1908.

denuded into piteous ugliness, and takes his family to view the jealously guarded and economically beautiful Black Forest of Germany. The coal operator who has made a horror of a whole country, and who is responsible for the dreadful kennels among the culm-banks in which his imported labor lives, travels with his gains to beautiful France, and he may motor through the humble but sightly European villages from whence came his last invoice of workers.

Every instinct for permanent business prosperity should impel us not only to save in their natural beauty all our important scenic possessions, but, also, to fully safeguard the great and revolutionary development almost certain to follow this epoch-making conference. We are assured by experience that the use of our great renewable resources of soil fertility is attended with the continuance of beautiful scenic conditions. The smiling farm, the blooming and glowing orchard, the waving wheat-fields, the rustle of the corn—all these spell peaceful beauty as well as national wealth which we can indefinitely continue and increase.

Can we not see to it that the further use of our unrenewable resources of minerals and primeval forest is no longer attended with a sad change of beautiful, restful, and truly valuable scenery into the blasted hillside and painful ore-dump, ugly, disturbing, and valueless?

The waters of our streams must furnish the "white coal" of the future, and electrically turn the wheels of commerce in smokeless economy. Such a change can consider, retain, and sometimes increase the beauty of the scenery; or it can introduce the sacrilegious ugliness of which the American gorge at Niagara is at present so disgraceful an example. The banks of the waterways we are to develop can be made so pleasing as to attract travel, rather than repel it, if we care for this land of ours as a place to dwell in, rather than to flee from.

We cannot, either, safely overlook the necessity for retaining not only for ourselves, but for our children's children, at least a portion of God's glory of mountain and vale, lake, forest, and seaside. His refuge in the very bosom of nature, to which we may flee from the noise and strain of the market-place, for that renewing of spirit and strength which cannot be had elsewhere. True, we can continue and expand our travel tribute to the better sense of the Eastern World, but that will not avail our toiling millions. "Beauty for the few, no more than freedom or education for the few," urges William Morris; and who shall say that such natural beauty of scenery as we have is not the heritage of all, and a plain necessity for good citizenship?

Every one of us recognizes the renewing of strength and spirit that comes from even a temporary sojourn amidst natural scenic delights. The President has but just returned from a "week-end" visit to his castle of rest in the Virginia hills. Could he have had equal pleasure in Hoboken? Mr. Carnegie's enterprises built dreadful Homestead, but he finds the scenery about Skibo Castle much more restful!

Who of us, tired with the pressure of twentieth-century life, fails to take refuge amid scenes of natural beauty, rather than to endeavor to find that needed rest in a coal-mining village, or in the heart of some sordidly ugly timber slashing? The most blatant economist, who sneers at the thought of public beauty, accessible by right to all, is usually much interested in private beauty of scenery, of home and of person, if accessible to him alone! Selfishly and inconsistently he recognizes in his own use the value of the natural resources he affects to despise.

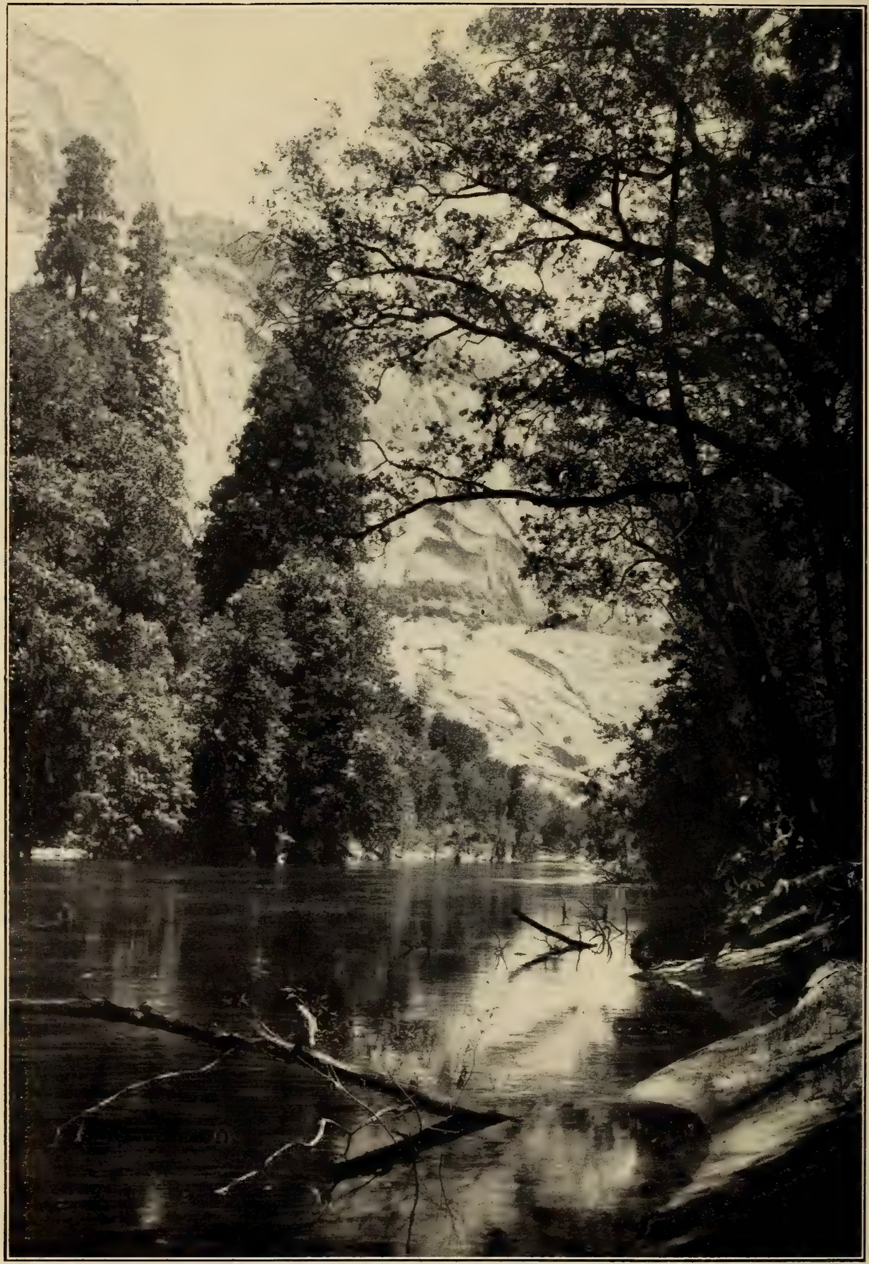
I am convinced that the vast majority of my countrymen hold deep in their hearts sentiments of regard for the glorious natural beauty of America. If to my inadequate words there be any response among those here present, may I but hint at some things that might well result?

First, we must hold inviolate our greater scenic heritages. All the nations visit the Falls of Niagara as the wonder of the Western World, yet we are even now engaged in an attempt to see how closely we can pare its glories without complete destruction. Eminent authorities warn us that the danger line is passed, and that a recurrence of a cycle of low water in the Great Lakes may completely extinguish the American Fall. A hundred other water-powers in New York and Ontario would together give as much wheel-turning electric energy, but all the world cannot furnish forth the equivalent of Niagara in beneficent influence upon the minds of men, if held as a scenic heritage. The glory of Niagara today hangs by a hair, and millions of incorporated private money seek covetously to cut the hair.

The national parks—all too few in number and extent—ought to be held absolutely inviolate, as intended by Congress. Intrusions for questionable water-supply needs, against the unselfish protests of those whose love of country cannot be impugned, should not be permitted.

The scenic value of all the national domain yet remaining should be jealously guarded as a distinctly important natural resource, and not as a mere incidental increment. In giving access for wise economic purposes to forest and range, to valley and stream, the Federal Government should not for a moment overlook the safeguarding to the people of all the natural beauty

THE SUBLIME ROCKS OF ITS WALLS GLOW WITH LIFE.
From photograph by J. N. Le Conte, 1908.



THE TUOLUMNE FLOWS IN TRANQUIL BEAUTY THROUGH THE HETCH-HETCHY.
From photograph by J. N. Le Conte, 1908.

now existing. That this may be done without in any way preventing legitimate use of all the other natural resources is certain.

The governors of sovereign States here assembled, the many organizations here represented, possess the power and have the opportunity to so change and guide legislation and public opinion as to foster the underlying desire for public beauty, both natural and urban. We have for a century stood actually, if not ostensibly, for an uglier America; let us here and now resolve, for every patriotic and economic reason, to stand openly and solidly for a more beautiful, and, therefore, a more prosperous America!

A HIGH PRICE TO PAY FOR WATER.

APROPOS OF THE GRANT OF THE HETCH-HETCHY VALLEY TO SAN FRANCISCO FOR A RESERVOIR.

[Reprinted by consent of R. U. Johnson, Esq., Associate Editor of the *Century Magazine.*]

Too little was said at the White House Conference of the conservation of one of our chief resources, our great natural scenery, though Mr. Horace McFarland made an impassioned appeal for its protection as a national asset. This is in no sense a local question. The Palisades and Highlands of the Hudson, the White Mountains, the Adirondacks, Niagara, the Yellowstone Park, the Arizona Cañon (to name but the chief of such treasures), belong to the whole country, and their invasion by special interests or their diversion to commercial uses should be a matter of the most vigilant scrutiny.

The Secretary of the Interior, for reasons which doubtless appear to him good and sufficient, and with the approval of the President, has made over to the city of San Francisco, on certain conditions, as a reservoir for its water supply the wonderful Hetch-Hetchy Valley, one of the most beautiful gorges of the Sierra, which, as part of the Yosemite National Park, was set aside in 1890 by reason of its scenery for the recreation and use of all the people. This action has, on the face of it, the authority of a congressional provision (of February 15, 1901) by which the Secretary of the Interior may grant water privileges in the three National Parks of California, *"if not incompatible with the public interest."* Whether the United States Supreme Court would hold that such authority extends to the destruction of so large an extent of the original purpose of the reserve may yet be the subject of adjudication.

In a matter relating to public lands the presumption is in favor of any course taken by President Roosevelt, Secretary Garfield, and Forester Pinchot. As our readers know, we have vigorously supported their enlightened services to the cause of forest conservation, as we have the services of preceding administrations. It was in this magazine that the movement for the creation of the Yosemite National Park first took public form in 1890, and the chief reason urged upon the Public Lands Committee for making the reservation—and we know whereof we speak—was to rescue from private invasion and for public use the rare beauty of the Hetch-Hetchy and of the Cañon of the Tuolumne River, which flows through it. We therefore have particular regret that we do not find satisfactory the reasons officially given for the Administration's extraordinary step, which, logically, would place the great natural scenery of the country at the service of any neighboring city which should consider its appropriation necessary or even desirable.

Let us say at once that we hold human life more sacred than scenery, than even great natural wonderlands, vastly as they contribute to save life and promote happiness; and if that were the issue, if San Francisco could not otherwise obtain an abundant water supply, we should be willing to dedicate to that purpose not only Hetch-Hetchy, but even the incomparable Yosemite itself. But this is not the contention of Secretary Garfield in the official document granting the request. The Administration's position is not that the step is a last resort, that no other source is adequate, but that Hetch-Hetchy affords the most abundant and cheapest available supply of pure water. Even this is stoutly denied by the opponents of the scheme, who contend, moreover, that a dozen other adequate systems may be found. Eminent and disinterested engineers have declared the present supply excellent and capable of ample development, as the water companies claim, and since the city fixes the water rates, and at need may condemn and acquire these sources at reasonable cost, there would seem to be no dangerous "monopoly." Indeed, the permission to dam the beautiful valley into a lake is conditional upon the previous exhaustion by the city of the resources of Lake Eleanor, which is also in the National Park. Other conditions are attached and compensations agreed upon which are believed by the Secretary to be safeguards of the public interests, with the important omission, however, to provide safeguards against the destruction of the scenery; but the fact remains that of this great reservation, which is as large as the State of Rhode Island, the northern third—for the watershed of the valley even above the Tuolumne Meadows must go with the valley itself—is to be withdrawn from the use of the people of the whole United States and given to the city of San Francisco. This involves a new principle and a dangerous precedent, and is a tremendous price for the nation to pay for San Francisco's water, and the burden of proof that it is *necessary* is upon those who advocated the grant. It is not enough that it should be thought merely *desirable.*

It is idle to attempt to discredit such defenders of the public's previous rights in the valley as John Muir and many other members of the SIERRA CLUB and other like organizations by calling them "sentimentalists" and "poets." Cant of this sort on the part of people who have not developed beyond the pseudo-"practical" stage is one of the retarding influences of American civilization and brings us back to the materialistic declaration that "Good is only good to eat." Most of those who oppose the grant live in San Francisco and vicinity and are deeply interested in the future of that redoubtable city; but they know the growing vogue of the few camping-grounds of the health-giving park, into which, in the torrid and dusty summer, the people of the lowlands swarm in "the pursuit of happiness"; they know the exceptional beauty of the Hetch-Hetchy, only surpassed in the Sierra by the neighboring Yosemite and by the distant and not easily accessible King's River Cañon; they know, also—to meet on its own ground the argument of cheapness—the money value of California's great natural attractions and that once to destroy the beautiful valley floor by flooding will be to render it irrecoverable.

There is one ground of hope that the danger may be averted. By the time it can be demonstrated that Lake Eleanor is not adequate, it is likely to be generally recognized that a pure water supply need not depend upon mountain resources, but may be obtained by filtration from streams of less pure quality. Meantime the citizens of San Francisco, who (alone of Californians!) are to vote upon the question, will do well to exhaust every other possibility of meeting their needs before giving their consent to the ruin of one of their imperial State's greatest natural treasures. We are confident that this issue would be the one most approved by the officials at Washington, who, from conscientious motives, have given assent to local official demands.

AN INTERESTING HIGH SIERRA TRIP.

On August 23d our party of six and pack-train left the Giant Forest. Our route took us via Rowell Meadows, thence over the (upper) trail through a forest of tamarack, via Williams Meadow and Sugar Loaf Peak to Scaffold Meadow. From Scaffold Meadow we made our way in Roaring River Cañon over a deserted miners' trail, up the left branch of the Roaring River (shown as Cloudy Cañon on government maps, but changed in the last sixty days to Deadman's Cañon). We camped opposite that singular mountain, the Whaleback, above the mouth of Table Creek. The next day we climbed Table Mountain (altitude 13,646 feet) in the great western divide, whence by far the finest view of the High Sierra I have ever had rewarded us—a view including the upper cañon of the Kern, the Mt. Whitney Range north from Olanche Peak, the north walls of the King's Cañon, the Great Western Divide, the Roaring River Cañon, and Moraine Ridge, and perhaps fifty high mountain peaks from Mt. Whitney downward, and many mountain lakes. Table Mountain is individual in having a greater surface area on its flat top (probably 70 acres) than any other mountain of corresponding or greater height in this country. We found no evidence of any trail to this mountain-top, nor any sign of previous visitors upon it; accordingly we lost considerable time in exploration on the way up and did not reach the summit until 3:40 P. M. As a result we camped, with such comfort as a fire gave us, on the rim of the steep wall of Cloudy Cañon all night at timber-line, in a grove of mountain pine, watching the home campfire 1,500 feet below. Breakfast next morning was hugely appreciated.

Our route next took us up the cañon to the Triple Peak divide, whence we found an abandoned trail through Miners' Gap (12,000 feet) across to the head of the western branch of Roaring River, paralleling north and south the Cloudy Cañon fork. The cañon of the stream known then as Deadman's Cañon has been now changed to Copper Cañon, in honor of the abandoned copper mine charmingly wrought in as a part of Stewart Edward White's story, "The Trail." The old trail through the gap we reconstructed, and, crossing, descended Deadman's Cañon to timber-line, where camp was made, while on the ensuing day we explored for a possible route down into the Middle Fork of the Kaweah. This we located with some difficulty, through a saddle (Red Gap) over which we passed and which presented no great obstacle. We monumented the route which diverges to the right from the old, unused miners' trail in Deadman's (Copper) Cañon a considerable distance above timber-line but below the last (upper) falls. This leads upward to a junction with a small stream flowing down from Red Gap, which can be readily recognized as a red, iron-stained saddle, quite to the right of the central point of the cirque-like ridge at the head of the cañon. On its summit is a miner's monument, well built, but not visible from the cañon. Crossing the saddle the route is monumented to a little meadow a mile down, where we camped over night in a little clump of trees. The route down into the Kaweah should be explored before being attempted, as we did not monument it. On the United States Geological Survey maps a small unnamed stream, running almost directly south into the Middle Fork of the Kaweah, and joining that stream about a mile below Lone Pine Meadow, will be noted. Leaving the meadow we crossed to the west side of the basin, then southwestward, crossed this stream, and zigzagged our way downward a little way to the west of it. This last descent should be examined carefully before being attempted, but the route over the gap is evidently much superior to that used by Mr. White via Lion Lake, and described in "The Trail."

The views from Table Mountain and, in lesser degree, from Miner's Gap are magnificent; the former far surpass the Mt. Whitney and Kearsarge Pinnacles section views, and, for that matter, any other high points in the Sierra I have visited.

It is not necessary to go up the eastern (Cloudy) cañon in making the journey, except as it may be desired to climb Table Mountain, and in any but good weather Miner's Gap would be impassable. Indeed, one of our horses fell on a sloping snowbank there and, after turning three somersaults, lit on his saddle and gaily glissaded down the snow for fifty yards, where the rocks stopped him. Miraculously he escaped with a dozen minor cuts and bruises. Several of the other animals performed unusual acrobatic feats on the journey, but none was seriously injured; all thirteen were in "good health and spirits" when we reached camp.

The rest of our journey down the Kaweah, thence via Redwood Meadows, through Mineral King, over the new Lady Franklin lakes trail, down the Rattlesnake to near its mouth, thence over a hunters' trail down Willow Creek to the Big Arroyo, thence via the mountain, Funston Meadows, to the Kern and home via Coyote Pass and the South Fork of the Kaweah, is familiar to the majority of Sierra Club members and needs no description, interesting as it is, save that it should be noted that Ranger Redstone says the trail into the Kern down the Rattlesnake will be open this spring, and that will be a route much superior in time and attractiveness to the Farewell Gap-Coyote Pass way.

But if you wish a glorious outing, the Roaring River-Kaweah trip offers fascinating attractions. The meadows, the streams, the fishing, the scenery (and by hearsay the hunting) are all that could be desired for comfort and pleasure. Any of our party will be, I am sure, glad to answer questions from those interested in the journey. The members of the party and their post-office addresses are: Gilbert Hassell, care Tibbetts Photo Co., San Francisco; Fred Shoup, Traveling Passenger Agent of the Southern Pacific Co., San Francisco; W. H. Bull, San Mateo; Tom Ritchie, Oakland; J. T. Mayfield, Naranjo, Cal.; Floyd Carter, Three Rivers, Cal.; and the undersigned, Flood Building, San Francisco.

Paul Shoup.

BOOK REVIEWS.

EDITED BY WILLIAM FREDERIC BADÈ.

"THE CANADIAN ALPINE JOURNAL."

The second issue of *The Canadian Alpine Journal** gives ample evidence of the enthusiasm felt by its members for one of the most recent of mountaineering organizations, the Alpine Club of Canada. Two interesting stories are contributed of attempts to conquer virgin peaks, one recording three failures to attain the summit of Pinnacle Peak, the other giving all too brief an account of the successful ascent of Mt. Garibaldi. The Scientific Section of the journal contains: "The Causes of Mountain Forms in the Canadian Rockies," Mt. Stephen's Rocks and Fossils," "The Nature and Activity of Canadian Glaciers," besides two botanical papers and a record of observations taken on the Yoho Glacier. In a lighter vein and of a more intimate touch is the Miscellaneous Section, including humorous articles and sketches contributed by members of the Paradise Valley camp, the headquarters of the 1907 outing. The journal is splendidly illustrated with photographs and drawings. M. R. P.

"THE SANITATION OF RECREATION CAMPS AND PARKS."

Any doubt as to the ultimate fate of the Tuolumne Meadows, should the damming of Hetch-Hetchy for San Francisco's water supply be finally accomplished, is dispelled after reading the chapter entitled "Water Supply" in Dr. Harvey B. Bashore's recent book, "The Sanitation of Recreation Camps and Parks."† The author, who is medical inspector for the Pennsylvania Department of Health, deals rather with the sanitary problems of summer cottages, of construction camps, and the semi-civilized camper of the East than with the nomad's community which is the Sierran's idea of a permanent camp, though the problems to be solved and the precautions to be taken are in many ways identical. The book is a valuable one, even though the sanitarian's point of view may seem in some cases a trifle exaggerated. Nevertheless, it is this same sanitarian point of view which in all probability will seal the doom of the Tuolumne Meadows if this Hetch-Hetchy grant is confirmed. The possible pollution of springs and surface streams and their ability to carry contagion many miles from its source is clearly shown in this book; and that the increasing hundreds of campers who yearly visit the area of the Tuolumne watershed will be prevented from continuing to enjoy this wonderful pleasure ground when the water must be kept pure for a city's use is clearly forecast, from the sanitarian's standpoint at least.

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* *The Canadian Alpine Journal*, published by the Alpine Club of Canada, 160 Furby Street, Winnipeg, Manitoba. $1.00.

† *The Sanitation of Recreation Camps and Parks.* By DR. HARVEY B. BASHORE. John Wiley and Sons, Publishers, 1908.

M. R. P.

"THE MOUNTAINEER,"
VOL. I, NO. 4.

One of the many interesting features of the November, 1908, issue of *The Mountaineer* * is the announcement of the Seattle club's program for its third annual outing to Mt. Rainier. Those of us who made the ascent of this mountain from Paradise Park in 1905 will envy our brethren in the North the opportunity given them to make its acquaintance from the comparatively unfamiliar northeastern side. Only the heartiest praise can be accorded this latest number of the *Mountaineer.* The steady improvement that each succeeding issue of the magazine has shown gives sufficient evidence of the club's growth and influence. No. 4 of Vol. I, published only two years after the formation of the club, will hold its own among the best mountaineering journals of America.

"THE ALPS IN
NATURE AND HISTORY."

There can be only one opinion on the merit of this fine book from the pen of Mr. Coolidge.† The author is an honorary member of the English, French, and Italian Alpine Clubs, and he has long been recognized as an authority on the Alps. This is not merely a book on mountaineering, but a careful descriptive and historical study of the Alpine Ranges, their peoples, flora and fauna, the geographical divisions, together with an account of ancient and modern exploration and mountaineering. To all this are added most convenient lists of the principal peaks, with their altitudes; another list, giving the first ascents in chronological order, from 1358 down to 1907, and a most satisfactory bibliography of the subject. The author clearly recognized the indispensable character of a thorough index, by the aid of which a reader can find in a moment what he wants. In fact, the book represents so prodigious an amount of labor, and is so full of condensed and valuable information on everything pertaining to the Alps, that it is bound to become a standard reference book on the subject. A map and seven diagrams of the chief passes help to explain the historical and geographical chapters. A perfect delight to the eye are the twenty half-tone, full-page plates, that truly adorn the volume. The following list of chapter headings will convey some idea of the contents: "What Are the 'Alps'," "The Snowy Region of the Alps," "The Pastures of the Alps," "Alpine Flowers," "Some Beasts and Birds of the Alps," "The Alpine Folk, Political Allegiance, Mother Tongues, Religions," "The Great Historical Passes of the Alps," "The Exploration of the High Alps up to 1865." The reviewer takes pleasure in recommending this as the latest and best book on the subject. W. F. B.

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* *The Mountaineer,* November, 1908. Vol. I, No. 4. Seattle, Washington.

† *The Alps in Nature and History.* By W. A. B. COOLIDGE. Green cloth, extra gilt. Pp. xx+440. $2.50 net. E. P. Dutton & Co.

"A Complete Mountaineer."

A book that claims to be "complete" on any subject is rightly regarded with suspicion. In this case, however, it merely marks the inclusion of the volume in a "complete series." The author himself disclaims the presumptuousness of the title* as an "impossible pitch." Nevertheless, this volume is in the opinion of the reviewer the best, the most interesting, and the completest book on the sport of mountaineering to be found in any language. This is saying a great deal, but it is said with deliberation. No small measure of the uniqueness and excellence of the work is due to the photographs, of which there are seventy-five. They are certainly a most remarkable set of pictures illustrative of mountaineering. Nearly all of them were taken by the author, who is apparently as expert with the camera as with the ice-axe. The contents of the book are divided into three parts, dealing respectively with the technicalities of the sport, with climbing in the British Isles, and mountaineering on the continent of Europe. The eight chapters of the first part discuss, among other things, the equipment of a mountaineer, the art of rock-climbing, snow-craft, and a very sane chapter on climbing with and without guides. No one who has had any experience in mountaineering can escape the feeling that a master of the craft is speaking in these chapters. Climbing in the Sierra Nevada consists chiefly in rock-climbing, and for some time to come will have to be done without the assistance of guides. I wish to say emphatically that the climbing contingent of the Sierra Club will find this book full of good suggestions and fascinating reading. The two chapters on rock-climbing for instance, will make a stimulating appeal to Sierrans who are by preference devoted to this form of the sport. The chapter on the dangers of mountaineering discusses perils and contingencies seldom thought of by a beginner. It is impossible to discuss at length the rich content of this book. My unhesitating advice is "Buy it." W. F. B.

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* *A Complete Mountaineer.* By George D. Abraham. Doubleday, Page & Co., New York, 1908. Pp. 493 and 75 half-tones.

FORESTRY NOTES

EDITED BY PROFESSOR WILLIAM R. DUDLEY.

FIRST NATIONAL FOREST EAST OF MISSISSIPPI CREATED.

To Florida goes the distinction of getting the first National Forest created east of the Mississippi River. In November President Roosevelt signed a proclamation setting aside and naming the Ocala National Forest, in Marion County in eastern Florida, and another proclamation creating the Dakota National Forest, in Billings County in the Bad Lands Region, North Dakota. Inasmuch as the last-named National Forest is the first in North Dakota, the two proclamations add two more States to the list of those wherein land will be put under scientific forest administration. There are now nineteen States and Alaska having National Forests.

Before the creation of the Ocala, in Florida, the two forests in Arkansas, the Ozark and the Arkansas, were the easternmost National Forests. Practically all the other National Forests are in the Rocky Mountain and the Pacific Coast States. The Florida forest has an area of 201,480 acres, of which about one fourth has been taken up under various land laws.

FOREST FIRES.

Because of continued drouths in the Eastern States, forest fires have been far greater in extent than for many years. It is admitted that the total amount of losses will never be known. Dr. W. T. McGee, of the U. S. Department of Agriculture, places the aggregate loss in all parts of the country during the summer months at $1,000,000 a day. Statistics for the entire season for the National Forests show that fires occurring on 168,000,000 acres of the latter have cost the Government, exclusive of salaries, $30,000. The amount of the value of the timber destroyed is not known as yet, but it will be insignificant when compared with the great losses occasioned by fires elsewhere. The Forest Service estimates on the basis of its own experience that the whole forest area of the United States could be patrolled and protected at the expense of $3,000,000 a year and save the estimated annual loss of $20,000,000.

NATIONAL CONSERVATION COMMISSION.

This most important body, the chief practical outcome of the Governors' Conference last May with the President and others, is about ready to report on the much talked-of inventory of the Nation's resources. It met for putting in shape the results of six months of labor on December 1st; its formal report is due to the President January 1, 1909. It is made up of some of the best known names in the Government scientific service, in public life, and in the various industrial fields. The lines along which the Commission has worked are those laid down at the May Conference, and such an active educational discussion has resulted in the public prints that every one now recognizes the natural division of our resources into two groups—one containing oils, coal, our various metals, which may become exhausted in their natural state, some of them, indeed, totally exhausted; the other group comprising soils, forests, and streams to be used for water-supplies, power, and navigation, which are capable of perennial renewal and continuance. A most important conception in the public mind is that the resources in the latter group are interdependent, and that back of the normal conservation of the soils of arable lands, and of the streams and of river navigation, stands a normal condition of the forests. The work of President Roosevelt in advancing the practical work of land reclamation and forest conservation (rather than preservation), and, finally, his leading the whole nation to take stock of their entire resources and provide if possible against their unnecessary waste and exhaustion, would of itself be enough to place him among the world's greatest statesmen; and beside him Gifford Pinchot looms very large as a benefactor of America.

The Commission held a conference with the Governors of States at Washington December 8th-10th, Mr. Pinchot presiding. More than thirty Governors signed a report approving the principle of co-operation among the States and between the States and the Federal Government in the conservation of the country's natural resources. Summarized reports on the investigations made by the different sections of the Commission were given out. Senator Flint of California is chairman of the mineral section. "The mineral production of the United States now exceeds $2,000,000,000 in value every year, and is second only to agriculture as a contribution to our national wealth. The waste in the mining and treatment of mineral substances during the year is equivalent to more than $300,000,000." The report on forestry says in part:—

> "Forestry is practiced on 70 per cent of the forests publicly owned and on less than one per cent of the forests privately owned, or on only 18 per cent of the total forest area. We take yearly, including waste in logging and in manufacture, twenty-three billion cubic feet of wood from our forests. Under right management our forests will yield more than four times as much as now. We can reduce waste in the woods and in the mill at least one third, with present as well as future profit. We can perpetuate the naval stores industry. Preservative treatment will

reduce by one fifth the quantity of timber used in the water or in the ground. We can practically stop forest fires, at a total yearly cost of one fifth the value of the standing timber burned each year, not counting young growth. We shall suffer for timber to meet our needs until our forests have had time to grow again. But if we act vigorously and at once we shall escape permanent timber scarcity."

PURPOSES AND SCOPE OF WORK OF NEW DISTRICT ADMINISTRATION OF NATIONAL FORESTS.

The institution on December 1st of six district offices in the West by the United States Forest Service, a big piece of work which has just been completed, involves a complete change in the machinery of this branch of the Government as regards the handling of National Forests. As a result of the reorganization, the Forest Service force at the headquarters in Washington has been reduced to the general administrative officers and to those who are conducting the investigative work of the Service outside of the National Forests.

The six districts, which have the same boundaries as the old inspection districts, will be in charge of six district foresters, with headquarters in Denver, Colorado; Ogden, Utah; Albuquerque, New Mexico; Missoula, Montana; San Francisco, California; and Portland, Oregon. The fifth district includes California and southwestern Nevada, headquarters San Francisco, California. For nearly a year preparation for the district organization has been going quietly but steadily forward. This has thrown an additional burden upon a force already excessively busy, but the work has been accomplished and accomplished on time. The transition has been particularly remarkable because it involved no material delay in the transaction of National Forest business while the change was going on.

"The Forest Service," said Gifford Pinchot, United States Forester, "is putting a large part of its work into the field where it belongs. . . . The district organization will mean a much freer use of the National Forests by the people, because there will not be the delay inevitable so long as National Forest business is handled from Washington. It is also going to mean that there will always be officers with the power to make decisions, near the ground, who can look into the facts for themselves, wherever necessary, without having to decide them at long range. I believe every man who uses the National Forests will realize these things inside of six months."

RECEIPTS FROM THE NATIONAL FORESTS.

The estimated receipts for the National Forests for the present fiscal year of 1908-1909 will be approximately $2,000,000, making the receipts from each of the six districts range from $275,000 to $350,000. A national bank in each district is designated by the Forest Service to handle all moneys received from timber sales, permits for stock grazing, and for special uses of various resources in the National Forests. This will mean that all the receipts of the Forest Service in the future will be deposited to the credit of the treasurer of the United States and made available for circulation in the part of the country from which it is derived, instead of being forwarded to the treasurer at Washington.

STATE REVENUE FROM NATIONAL FORESTS INCREASED.

In addition to the benefits secured by fire protection and by regulations which control the use of timberland and range so as to insure permanent supplies for local wants, the States having National Forests now receive, under the new Agricultural Appropriation Bill, 25 per cent of the gross proceeds derived from the sale of National Forest resources. This amount, according to law, goes to offset any losses to the States through withdrawal of forest areas from taxation, and is devoted to public roads and schools.

Several years ago complaints were made that the withdrawal of timberlands for forest purposes reduced the taxable areas of the States in which withdrawals were made. The Forest Service, quick to see the justice of these complaints, recommended at first that 10 per cent, and later that 25 per cent, of the gross proceeds from the National Forests should be paid to the States. As a result, the States are assured of school and road funds, doubtless more certainly than they otherwise could have been, since the permanence of the forest resources is now secured by conservative management. Had the forests never been established, their resources would undoubtedly have been exhausted by hasty and improvident methods of exploitation, leaving the land wasted and unproductive.

The amounts to go to each State or Territory from the receipts of the fiscal year which ended June 30, 1908, are: Alaska, $2,684.78; Arizona, $42,610.44; Arkansas, $313.68; California, $52,437.78; Colorado, $50,955.67; Idaho, $56,307.84; Kansas, $643.55; Montana, $75,807.41; Nebraska, $2,349.77; Nevada, $4,577.95; New Mexico, $25,464.12; Oklahoma, $554.48; Oregon, $32,313.52; South Dakota, $8,456.60; Utah, $32,151.02 (including Uinta Indian refund of $5,348.07); Washington, $18,032.79; and Wyoming, $41,402.38.

To Establish Experiment Stations in National Forests in the West.

Forest experiment stations will soon be established in a number of the National Forest States of the West, according to plans which have just been completed by the United States Forest Service. These new stations are expected to do the same for the development of American forests as agricultural experiment stations have done for the improvement of the country's farms.

As a first step in this work an experiment station has already been established on the Coconino National Forest in the Southwest, with headquarters at Flagstaff, Arizona. Stations in other National Forests will be established later, and it is the intention ultimately to have at least one experiment station in each of the silvicultural regions of the West.

One of the most important parts of the work of the new experiment stations will be the maintenance of model forests typical of the region. These areas will furnish the most valuable and instructive object-lessons for the public in general, for professional foresters, lumbermen, and owners of forest land, and especially to the technical and administrative officers of the National Forests.

In the recently established station on the Coconino National Forest one of the first problems to be taken up will be the study of the reproduction of western yellow pine and the causes of its success and failure. A solution of this problem of how to obtain satisfactory reproduction of the yellow pine is of the greatest practical importance to the Southwest, since the yellow pine, which is by far the most valuable tree there, is in many cases not forming a satisfactory second growth. The study will be carried on largely by means of sample plots, which will be laid out for future observation to determine the effects of grazing, of the different methods of cutting and disposing of the brush, and of other factors on the success of reproduction.

Other studies which will be taken up soon are a study of the light requirements of different species at different altitudes and the construction of a scale of tolerance which will be based on the actual measurements of the light intensity, and not only, as has hitherto been the case, on general observations alone; the taking of meteorological observations to determine the effect of the forest upon temperature, humidity, melting of snow, wind velocity, etc.; a study of the relative value of the germinating power of seeds from trees of different sizes, ages, and degrees of health; and similar studies of value to the region. A complete collection of the flora of the forest will be made to form a herbarium, which will be kept on the forest and will be available for reference at any time.

THE FOREST SERVICE ESTABLISHES FIELD HEADQUARTERS IN SAN FRANCISCO.

For three or four years past administration of the National Forests from Field headquarters has been anticipated and the whole trend of the organization has been toward it. The first definite step was taken July 1, 1907, when six inspection districts were started and inspectors permanently assigned to each. This gave the technical men an opportunity to become acquainted with the supervisors and rangers and users and—what was fully as important—convinced the men on the forests, the lumbermen and the stockmen, that these inspectors were practical men who knew their business. After a year and a half this organization proved inadequate. Systematized inspection meant increased efficiency in the field, but it also meant vastly increased routine business to be handled by the Washington office. One good result of it was the training of both the ranger and the inspector.

Plans to establish district headquarters were begun about July 1st, and on December 1st the new organization went into effect. The offices for the Fifth District, California and a portion of western Nevada, are in the First National Bank Building in San Francisco. Mr. F. E. Olmsted, formerly chief inspector, is District Forester, with Mr. Coert DuBois, one of the inspectors, as Assistant District Forester. The organization of the district office follows closely that of the Washington office. Men in charge of the branches of operation—Grazing, Products, and Silviculture—in Washington direct the policy and exercise general control over similar lines of work in the district office. All business except that requiring departmental action is transacted in the district office,—accounts are audited and paid; receipts from grazing, the sale of timber, and the use of National forest land are deposited in the First National Bank of San Francisco and accounted for to the district fiscal agent; applications for classification of land under the Forest Homestead Act are made to the District Forester and examined under his direction and, if found to be agricultural, listed by him with the General Land Office. A corps of technical foresters, land examiners, expert lumbermen, miners, and engineers attached to the district office are available for assignment to any of the California forests to assist and advise the local officers.

The personnel of the new office is made up of men who have had long experience in service work in all parts of the West and in the Washington office. Mr. R. L. Fromme, in charge of operation, is a forest school graduate who, through his experience as supervisor of the Kaniksu National Forest, is well qualified to appreciate the difficulties of the supervisors in the district and help them. His office is responsible for the organization and equipment of the ranger force, the patrol of the forests, and the construction of headquarters, roads, trails, and other permanent improvements; the occupancy of forest lands, changes in forest boundaries, the accounts office, and the maintenance of the district office.

Mr. John H. Hatton is in charge of the Office of Grazing. He has been an inspector in this district for some time and is thoroughly familiar with range conditions throughout the State. His assistant, Mr. M. B. Elliott, was formerly supervisor of the Tahoe National Forest. Besides the routine work of supervision of the use of forest range throughout the State, this office will co-operate with local livestock associations, the State Veterinarian's office, and the Bureau of Animal Industry in the enforcement of quarantine regulations; and will direct the work of exterminating coyotes, cougars, wild cats, and other animals destructive to stock.

The district organization will increase the opportunities for investigative work. Studies to increase the utilization of National forest timbers and find substitutes for those disappearing; the compilation of statistics on the lumber industry and timber-testing experiments in the Berkeley laboratory will be under the direction of Mr. L. E. Hunt, chief of the Office of Products, who has been in charge of similar work in California, Nevada, and Utah. In addition, the chief of the Office of Products will exercise general supervision over all timber-treating plants maintained by the service and will co-operate with private owners in preservative methods of treatment for the timbers used in the district.

Mr. G. M. Homans, who has been Chief of Management in the Washington office, is in charge of the office of Silviculture, which will supervise the sale and free use of timber on National forests, forest planting, and silvical studies. In addition to the timber-sale business, which in 1907 amounted to over $100,000 in this district, this office is ready to give advice in the management of forest lands to owners throughout the State.

The operation of a business of this size entails considerable legal work. To handle this a law officer is attached to the district officer, who, besides approving contracts and bonds prepared in any of the branches and giving advice to those handling cases, will also assist the United States Attorney in the prosecution of criminal cases arising on the forests. Mr. E. A. Lane, a Californian, well versed in the mining and water-right laws of the State, is law officer for District No. 5. [F. E. O.]

GOVERNMENT CONTROL OF WATER POWER.

The question of what kind of control the National Government should exercise over water power companies bids fair to become of very great importance in California. At present only a small fraction of the available water power of the State is utilized, although within the last two years surveys and estimates for further development have been undertaken on a very large scale. The utilization of water power, especially its future utilization, is of such vital importance to all the people that some restrictions for insuring a wise and fair use of it seem to be demanded. It will enter very largely into questions of transportation, lighting, heating, pumping, and innumerable other mechanical uses. The more it is developed the greater will be the saving in other natural resources, such as coal and wood.

The Forest Service is concerned with this matter because it expends money to protect the cover of the watersheds from destruction by fire, excessive cutting of timber, and overgrazing, thus assuring a steady flow of clean water; and it has direct charge of the government land necessary for reservoir sites, power-house sites, and rights of way for conduits and transmission lines. The configuration of this government land, moreover, gives the *fall,* without which any amount of water would be quite useless for power purposes.

On these grounds, therefore, the Forest Service believes that the power companies should pay to the people a reasonable return for value received whenever they make use of these natural resources belonging to all the people. The present policy, to which vigorous objection is made by some of the power companies, is to require the fullest possible utilization of water power opportunities, consideration of *local* industries, a contract involving a thirty- or forty-year lease of the land, and a charge of from two to ten cents per thousand kilowatt hours on the power developed.

The power companies have attempted, and may again attempt, to obtain such legislation as would give them absolute patent to the necessary lands, in which event they might be wholly removed from any government control. [F. E. O.]

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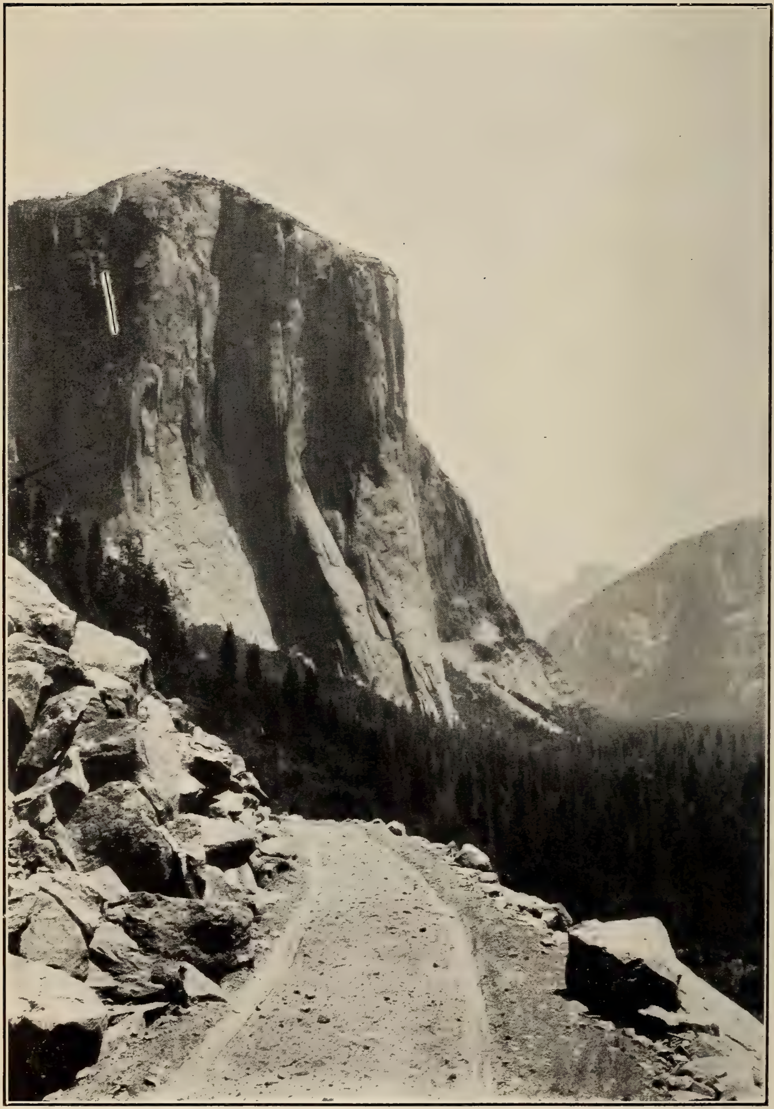
All communications intended for publication by the Sierra Club, and all correspondence concerning such publication, should be addressed to the Editor, Elliott McAllister, Room 302 Mills Building, San Francisco, California.

Correspondence concerning the distribution and sale of the publications of the Club, and concerning its business generally, should be addressed to the Secretary of the Sierra Club, Room 302 Mills Building, San Francisco, California.



EL CAPITAN — HIS HEAD THREE THOUSAND FEET ABOVE THE VALLEY FLOOR.

From photograph by J. N. Le Conte.

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CAMPING ABOVE THE YOSEMITE—A SUMMER OUTING WITH THE SIERRA CLUB.*

BY HARRIET MONROE.

When the State of California, in March, 1905, deeded back to the nation the valley wonderful which she had long held in trust, the Yosemite National Park absorbed the little State park and became a unit. Eleven hundred square miles of white granite mountains and green valleys, of giant forests and clear lakes and rushing waters, are now the property of the nation, to be used as a pleasure-ground forever. In the heart of the Sierras the valley lies, so remote and the greater part of it so inaccessible, that the people in general have no conception of the treasure they possess.

One recent summer the California Sierra Club gave its members and a few of its friends the opportunity of exploring this wilderness. Every year these mountaineers take a month in the open, far beyond the reach of inns and stages; and this Yosemite year it was my happy fortune to follow—with one hundred and forty of its campers, attended by packers and cooks and a long train of heavily loaded pack-animals—the rocky trails of the National domain. Park we scarcely ventured to call it, for the Government has not yet even made a road or built a lodge, and he who climbs out of and beyond the Valley must carry his bed and provisions with him.

It was a fine morning late in June when my friend of the Club and I took the six-horse Yosemite stage from Merced, on the Santa Fé Railroad, for that beautiful, swift, dusty two days' ride which has now gone the way of other stage-rides into the difficult but happy past. We felt very strange in our mountain clothes, with knee-high hob-nailed boots of incredible stoutness, skirts and bloomers to the knee, rough waists and coats, and wide-brimmed sombreros; very strange and most wonderfully free of all conventions and traditions. Our dunnage-bags were loaded on with us,—brown canvas rolls containing fifty pounds—no more—of bedding and clothes for a month of tramping and sleeping in the open. And thus emancipated we sped along through green hot meadows, and around and over the curving foothills; and at last, after noon of the second day, we took our places behind a new driver of Falstaffian humor and proportions, for the final dash into the reservation, and through the gorge of the Merced to the Club's first camp in the wide eastern end of the Valley.

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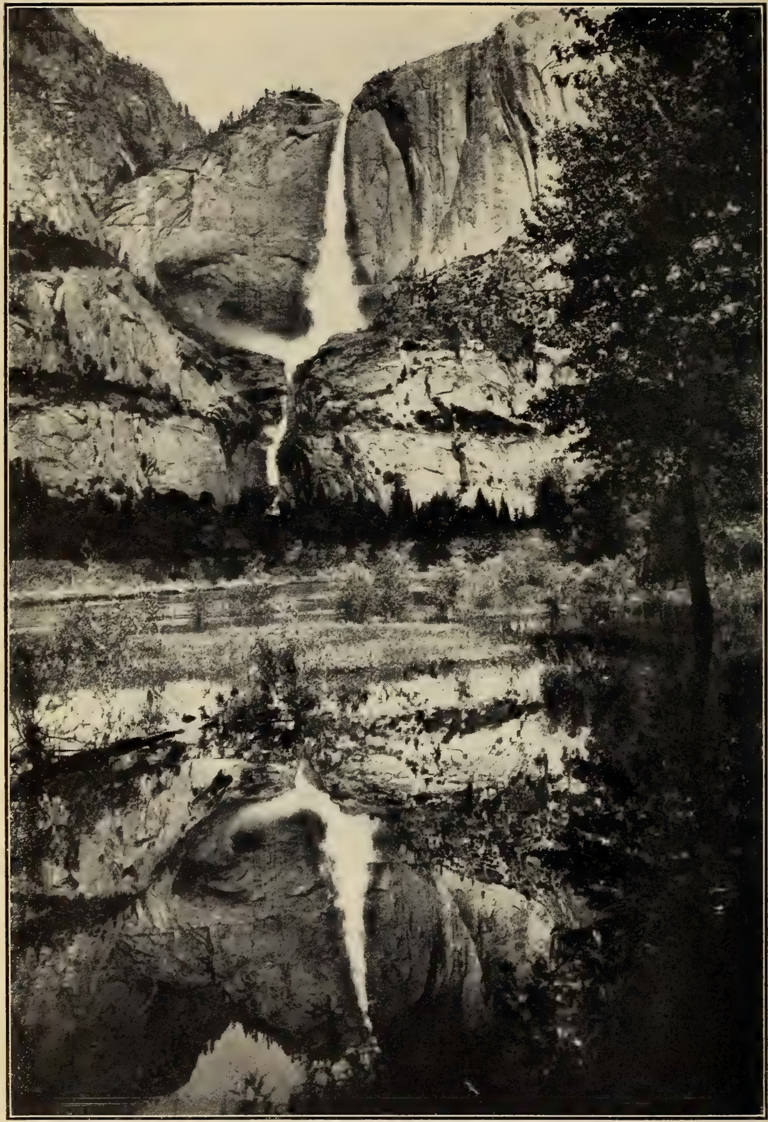
Our road at first led through rich forests. Insensibly our eyes accepted the girth and stature of great trees—huge yellow pines with their patterned bark, and shaggy-coated cedars; so that we came unaware upon our first sequoias, those vaster giants of an elder world. So simple in their majesty they were, so fit and fine in their immensity, that like great men they seemed at first as other folk, dominating us gradually by sheer force and grandeur. Slowly our eyes measured their girth and height, accepted the mountainous roots, the massive columns, rugged, straight, yet soft-coated as with thick brown furry velvet, against a thousand winters' destructive storms. Gradually our gaze climbed each old trunk bare of boughs to that plume of green away up against the sky; until our imaginations bowed at last to the splendor of this conquest of time and all the elements, to life persistent and triumphant through so many centuries, and still facing the future in the power and beauty of eternal youth.

Only after leaving the two giants did I learn that they were the last on our route. In popular prejudice the



YOSEMITE FALLS (2600 FEET) MIRRORED IN THE MERCED RIVER.

From photograph by J. N. Le Conte.

Yosemite is the land of big trees, so the discovery that the only grove of sequoias in the park is ten miles west of the Valley involved a readjustment. We clattered out of the forest by and by, and on at breakneck speed toward the Merced gorge. Gradually the bed of the river hardened to granite and deepened to a cañon. We found ourselves galloping along a narrow ledge midway up one perpendicular cliff, while the stream below was a torrent foaming and leaping over the rock and shouting from wall to wall a splendid tune. It was as if Jove were making a symphony of his thunders, playing them in lordly music on this mighty reverberating instrument; for miles while the gray gorge shadowed and deepened the pealing harmonies rose and fell, on a scale the most grandly melodious I ever heard in nature.

Insensibly the august music faded into mere sound that hushed at last, the gorge widened as its granite walls grew into mountains, and the Merced Cañon became the Yosemite Valley. We paused before the Bridal Veil Fall, which throws long diaphanous silvery draperies over the stern gray cliff—wind-blown draperies of softest tulle in which the rainbows swing. We saw the gleam of Widow's Tears which faded into vapor before they fell, and of the long slender Ribbon Falls that fluttered in the wind. We dashed through forests rich with half the kinds of trees that grow, and faintly fragrant with azaleas. We rounded El Capitan, that tall white master of the Valley—incredibly straight and tall—incredibly whiter than white, his head three thousand feet above the Valley floor, his gleaming granite armor inviolate. We had a distant glimpse of Yosemite Fall, and saw North Dome and Half Dome lock the Valley in at the east, while other mountains, shoulder to shoulder,—Sentinel, the Three Brothers, Liberty Cap, Glacier Point,—sternly guard its beauty forever. We paused only a minute at the little row of shops, the little old hotel, and then dashed on another mile under a golden sunset sky. And at last we alighted, tired and very dusty, at the

Sierra Club camp, and saw roughly dressed figures flitting under the trees, or eating supper from gray plates as they sat on the ground. And we washed off some of the dust at the river, found friends and food and a place to camp, rolled out our sleeping-bags on the grass under an oak-tree, and said good-night to the peering stars.

The week in the Valley that followed brought a sense of close intimacy with the grand old earth; we seemed to share in her highest lyric moods. For however nature may brood or smile or grieve, or be angry or serene, in the rest of the world, here in this sunken magic Valley she chooses to exult, to build a bower for her majesty and sing and shout and be glad. We grew aware as never before of her splendor and joy; we saw it in the green of the meadows and woods, in the sparkling white of the granite domes; and we heard it in the race of cascades, in the tumult of an hundred waterfalls.

The most potent revelation she granted me was this of the beauty of falling waters. Their unimaginable variety seemed beyond the power of even divine invention. Out of a crevice in the rocks a thin little film of lace would flutter and lose itself in the sun; or a heavier mass of gleaming foam would drape the mountain with clouds in its leap of a thousand feet to the river. Along a mad path of precipices whimsical Illilouette dashes like some gay Ariel, singing as it flies. And down to the high crest of Nevada Fall come the melted snows of a whole mountain range—a mighty mass of raging waters that shake the earth with their plunge. Seven hundred feet Nevada leaps in a curve that breaks a little near the top and plumes outward; and then the great wild torrent gathers itself together in the clear green depths of Emerald Pool, skims madly along the Silver Apron, and at last, over the solid granite shelf of Vernal, plunges another three hundred feet with a mass and weight and thunderous roar that only Niagara can surpass.

But the beauty of the Yosemite Valley has been sounded and painted often enough; it is not the purpose of this article to linger in that wonderland, but to climb out of it into the High Sierras beyond, into the less familiar, but scarcely less beautiful, regions which Congress never gave away, and which now make up ninety-six hundredths of the Yosemite National Park. But a few words, in passing, may be said of the need of a systematic scheme of improvements which should begin in the Valley and radiate to the remotest corners of the park, making the whole reservation as accessible and comfortable for travelers as the Yellowstone.

California, during her forty years' guardianship, did little but build a post-road, cut a few trails, and license an inn or two. To-day all these are pitifully inadequate. The condition of the post-road makes Yosemite dust a by-word, and yet this is the only path for pedestrians along the Valley floor. Beautiful shady forests stretch at both sides of the road, and along the river are lovely glens and incomparable views, yet during all this half century no trail has been cut; equestrians and pedestrians have had to drag along in the hot high-road's dust and glare. The floor of the Valley should be riddled with trails, and the post-road should be macadamized and, if possible, oiled once or twice a season from the point where the new railway reaches the reservation. In the greater park above the Valley—all the vast expanse to the north, south, and east—the only wagon-road ever built is the old Tioga mining road, which, through long disuse and lack of repair, through floods and frosts and avalanches, has become impassable for wheels and dangerous for horsemen. Trails also through this magnificent wilderness are few and far between and very rough.

Thus the whole problem of bringing the park and the people together should be studied by competent engineers; and Congress should rise to the scale of expense involved in their report. In the Yellowstone the Government has spent millions in the construction and care of good roads and trails; and millions must be similarly spent in the Yosemite if its wonders are to be accessible to the people.

Then a hotel concession should be granted, including a series of way-stations in the greater park, as Tuolumne Meadows, Hetch-Hetchy Valley, the base of Mount Lyell, Lake Tenaya, Lake Eleanor, and many other points.

Also the Government should say a resolute "No" to all predatory schemes, however plausible. Its recent weak acquiescence in the plan of the San Francisco Board of Supervisors, who wish to convert the Hetch-Hetchy Valley into a reservoir, sets a vicious precedent and should be revoked. The concession is wholly unnecessary, since an adequate supply of the coveted Sierra water could be obtained elsewhere at a slight increase of cost; and if it is fulfilled, a little garden of paradise, the focal point of many trails, and the jewel-casket of the upper park, will be destroyed forever.

Something will be lost, no doubt, when many pilgrims follow the mountain trails—when this wilderness, like Switzerland, is smoothed and carved for the foot of man and dotted with lodges for his comfort. It must be, and on the whole it is best; but the facile tourists of the future will be less happy than we adventurers, who found nature virgin and inviolate, and braved her beauty and terror in the mood and manner of the pioneers.

A week in the Valley initiated us. We grew accustomed to nights in a sleeping-bag, with only tree-tops between us and the stars; to days of climbing up and down the Valley trails, and tramping back and forth along the dusty road. We got acquainted with new friends in the Club, and with their open-hearted, free-spirited way of taking everything for granted and making light of discomforts and accidents. We bathed in the icy river at sunrise, and squirmed into our clothes, there in the women's camp, behind any improvised curtain we could rig up out of a cloak or blanket fastened to the trees. We passed "down the line" for breakfast beside the long plank tables of the commissary department, getting our granite-ware plates from the pile, then tin spoons and cups and steel knives and forks from boxes, and lastly our rations, ladled out from steaming pots by the pretty girls of the Club, who wore bright bandanna caps and aprons and took turns in serving. We learned to sink gracefully down to mother earth without spilling any food from our dishes, and to make a table of our laps or the ground. We learned, or thought we did, to wear our short skirts and high hob-nailed boots with an air as though we had been born to the joy of them; and we noted with amazement the manifold uses of the bandanna, which, as lunch-bag, napkin, apron, night-cap, neckerchief, handkerchief, dust cloth, wash cloth, proved the most indispensable article of camp equipment. We acquired new ideas of personal adornment, admiring the grace with which these western mountaineering girls wreathed their sombreros with wild flowers or small brown pine-cones, and brightened their attire with gay scarfs and pretty rakish sweaters. We knew literally the emancipation of having 'only one dress to put on," and the difficulty of keeping that one dress unspotted; and we found it no hardship to wash our washable clothes in the running stream and dry them in the sun and wear them unironed, like Homer's ladies of long ago.

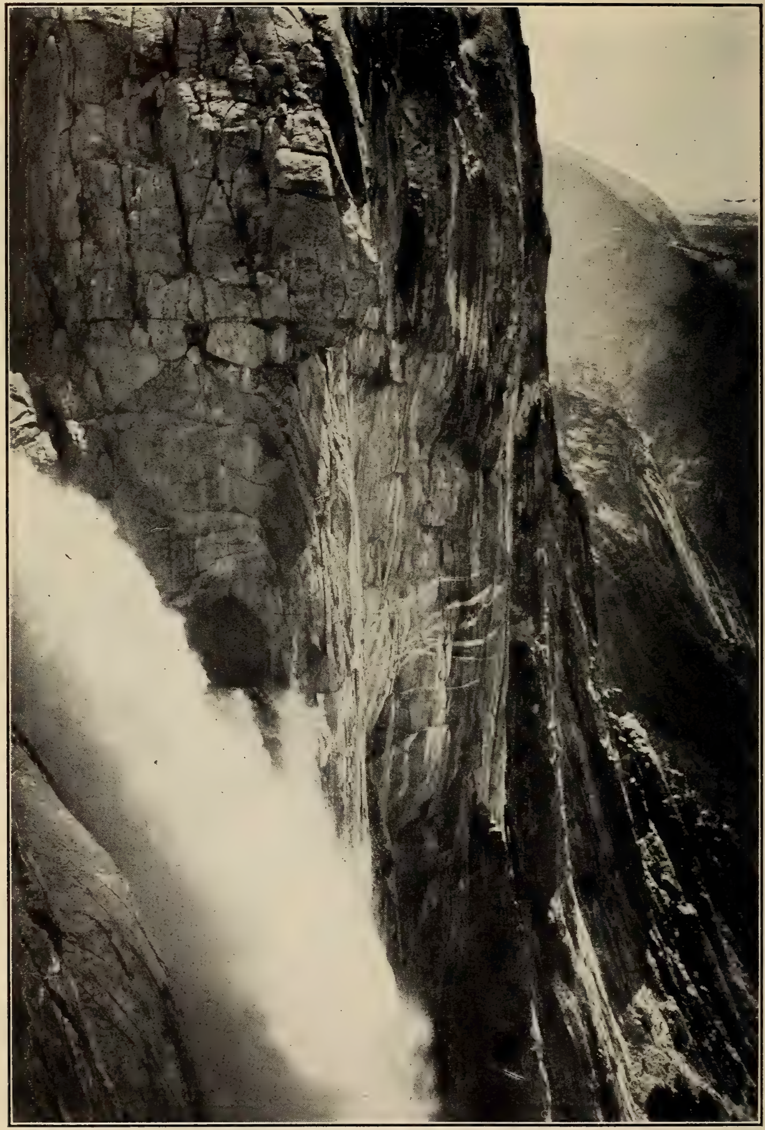
In command of the expedition was the Club's Outing Committee—California lawyers and business men by profession and mountaineers by election, to whose mild authority we all submitted. For two months, ever since the melting of the snows, their packers had been stocking our various camps, carrying in provisions from distant railroad towns; and now these men waited, with sixty or seventy horses and mules, to pack our dunnage-bags and all the commissary traps up that steep trail and into the High Sierras. Among them but aloof, disdaining and disdained, were three Chinese cooks, especially "Charley Tuck," the indispensable chef who had served the Club during every one of its outings, and who knew how to make "hot-cakes" for a hungry crowd in the open and to bake real bread in flimsy collapsible portable stoves. Fortunately no provision had to be made against wet weather, for this region is exempt from rain in summer. The carrying of tents for such a crowd up into so high and difficult a wilderness would be almost impossible.

It was in the chill dawn of a Fourth-of-July morning that we started to climb out of the Yosemite. As the first day's work was to be severe, I proudly mounted, for the first stage of the journey, a horse which a little California artist and I had engaged together. Equestrians were numerous that day, as there were plenty of horses to be hired in the Valley stables, and many of us needed a lift to the top of the mountain-wall. We rode on through the rich green meadows and climbed a steep zigzag through a gulch on the Eagle Peak trail, mounting a thousand feet or so and paralleling the Lower Yosemite Fall. At about nine o'clock I found the little artist sitting on a rock at the foot of the Upper Yosemite Fall, gave her the horse, and waited alone for friends who would soon appear afoot.

It was my farewell to the Valley and its waters—this hour in front of the great Upper Yosemite—the mighty cataract, a third of a mile high, which is perhaps the most beautiful of all. It seemed like some young Greek god, some athletic nude Achilles, standing there so slim and straight and tall, with his head in the sun and his feet on the clouds. Below me, patterned by the winding stream, was the green floor of the Valley, velvet to the very base of the gleaming lofty cliffs beyond; above me rose the vertical granite wall, shadowed and brown against the bright blue zenith; and in front of me close against it leaned this fine lithe spirit, springing from the mountain, poised on the rock, alive with a thousand leaping pulses, chanting a song of a thousand echoes. In that long hour the splendid living thing became companionable and divinely kind. My little human life grew to its stature, throbbed with its force, sang with its music. For an hour I shared in the triumph with a pagan joy, sitting there in the sun on a ledge and watching the eternal rush and rest. Those glorious waters washed the

IN FRONT OF THE GREAT UPPER YOSEMITE — THE MIGHTY CATARACT, A THIRD OF A MILE HIGH, WHICH IS PERHAPS THE MOST BEAUTIFUL OF ALL.

From photograph by J. N. Le Conte.



THE LIP OF THE GREAT UPPER YOSEMITE, AS IT FIRST PLUNGES OVER THE PRECIPICE.

From photograph by J. N. Le Conte.

whole world clean; I looked down and saw its sins dashed away over the rocks, I looked up and saw its perplexities float off in those climbing mists. And below me, as I swung my feet over the precipice, the Valley lay fresh and pure, its silver ribbon of a river sparkling in the sun.

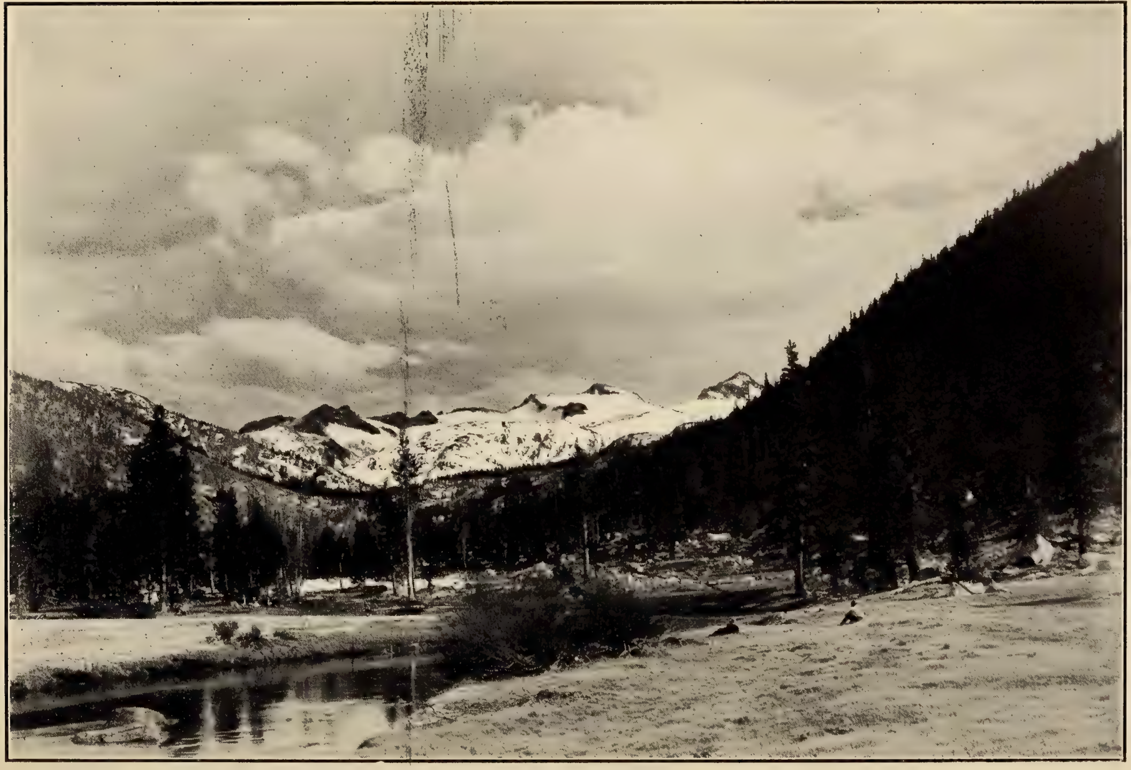
Then my friends came and I climbed with them up the zigzag trail; up, up, to the top of the wall, just above the ledge over which the exultant Yosemite takes its leap. We spread out the contents of our bandanna lunch-bags and ate in the sun and slept off our weariness; another mile then, and I found my little broncho tied to a tree, mounted him, and rode on ahead, alone. Hours and hours, miles and miles, I rode under the high pines, through the long still afternoon; up and down the slopes, into and over the little streams. Many of the Club were far ahead of me and many others as far behind; but the immense solitude of the forest made me doubt their existence and my own, until the only thing of flesh and blood left in the world seemed to be my patient horse, contentedly plodding along, shaking his mane and munching such young leaves as he could find.

A campfire of huge tree-trunks shone through the twilight when I reached Porcupine Flats, our first stopping-place, and parted from my equine friend forever. And in the blessed warmth of it I spent the night, I and twenty or more other trampers whose dunnage-bags, and the laggard mules that carried them, were still miles behind. The more fortunate members lent us such blankets as they could spare; we had snatches of sleep and of talk and of walking under the dark pines; and so, between dozing and waking, I learned the beauty of the night in the High Sierras.

The days that followed were full of good fellowship with people, and of high fellowship with mountains, and mountain lakes, and lofty pines, and snowfields, and sharp difficult summits. The second day's journey brought us to Lake Tenaya, the "lake of the shining rocks," a little jewel set among white granite slopes polished smooth by the glacial action of long ages. This was an easy tramp of only ten miles, and all the afternoon we rested and dozed, and swam in the warm clear water. On the third day we scrambled over rough granite and melting snows and shallow streams up to the Cathedral Lakes, nine thousand feet above the sea among brown pines and drear, bleak, jagged peaks; and then on in soaked shoes through miles of forest, wading the streams and clearing the other obstacles as we could, to our twelve days' camp in Tuolumne Meadows.

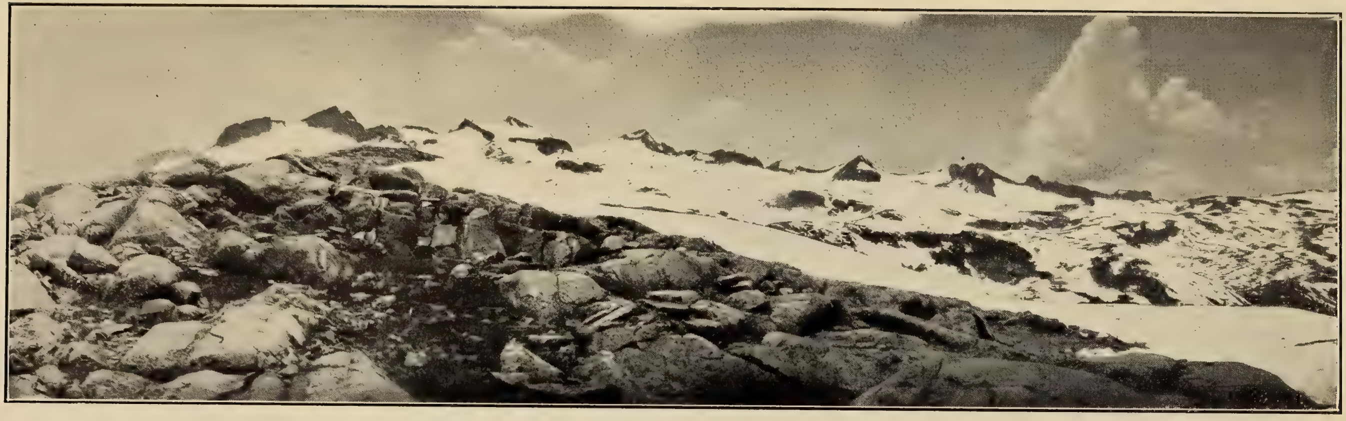
Here we made ourselves at home, and from this base-camp took tramping or climbing or fishing trips, according to individual taste. The snows had but recently melted from the green and flowered meadows; the first night we shivered until the morning sun shone in upon our sleeping-bags with penetrating warmth. So we gathered quantities of dried bunch-grass and made soft beds to take off the chill of the earth. Charley Tuck set up his flimsy stoves, and gave us buckwheat cakes at breakfast and fresh bread every day; and we even had fresh meat from the Valley, and a present of mutton from herds which the soldiers caught trespassing on Uncle Sam's domain. A deliciously cool soda spring bubbled and fizzed out of the red earth a mile away, and thither we would go with lemons and sugar to drink soda lemonade. From this camp started various expeditions, the weak or lazy idling if they chose, and the hardier mountaineers climbing Dana, Lyell, and Ritter, the three 13,000-foot mountains, and even—twenty of the more venturesome—cutting and tearing their way through the spectacular Tuolumne Cañon, carrying on their backs bedding and provisions for four days.

At eight or ten thousand feet above sea level, out in the open, anxieties and dangers dwindle away, and dramatic contrasts become the most natural thing in the world. To walk over hard snow-drifts under a hot sun, for example; to burn at midday and shiver at night, and soak one's feet in a thousand rills—all without taking

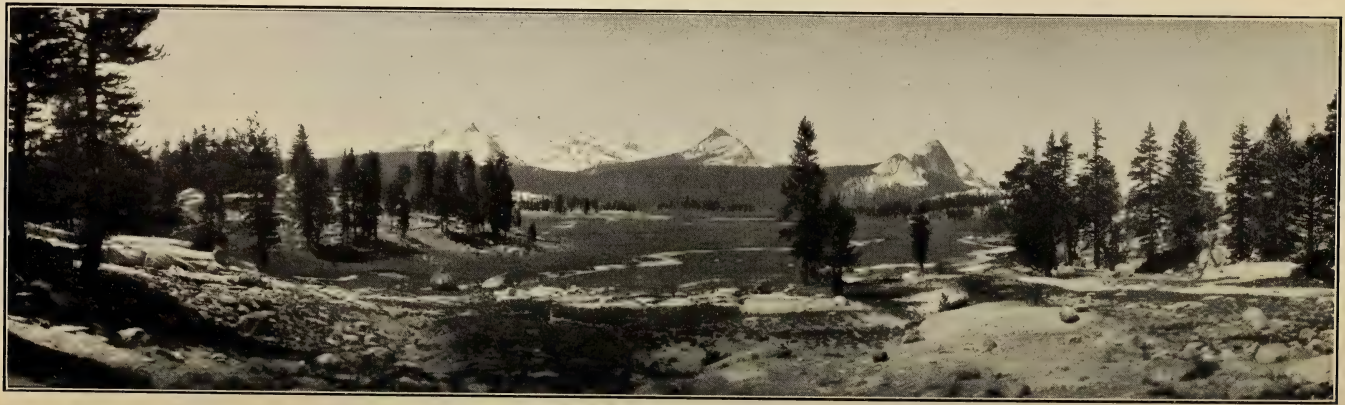


WE FOLLOWED THE LYELL FORK OF THE TUOLUMNE BACK TOWARD ITS SOURCE IN THE MT. LYELL GLACIER.

From photograph by J. N. Le Conte.



THE MT. LYELL GROUP FROM DONOHUE PASS.



ACROSS THE LOWER END OF THE TUOLUMNE MEADOWS—UNICORN AND CATHEDRAL PEAKS AND FAIRVIEW DOME.

From photographs by E. T. Parsons, 1907.

cold; to be a barbarian and a communist, a homeless and roofless vagabond, limited to one gown or one suit of clothes; to lose one's last hat-pin or shoe-lacing, and give devout thanks for a bit of string wherewith to tie oneself together; to make one's toilet on a slippery bank, after a brave plunge into an icy river—all these breaches of convention become commonplaces in such a life as this, part of the adventure, a whispering in the ear of nature's secrets.

Certain pictures from these nights and days are vivid among beautiful memories. Tuolumne River, which we followed to the beginning of its awesome gorge, has as many moods as an army with banners: slipping, sliding, leaping, cascading, resting in still basins full of fearless trout, leaping over ruthless precipices to a chasm piled with cruel rocks. One morning we followed the Lyell Fork of the Tuolumne back toward its source in Mount Lyell's glaciers, and perched for the night on any rock we could find up the steep slope at the base of the mountain, each group having its own little campfire against the frost and snow. The scene was of an indescribable magnificence—an amphitheater of snowy peaks shutting out the southern stars, the great campfire flaming below us and the lesser fires climbing the slope, while the pearly river slipped away northward into the soft still night.

Another picture is of Lake Mono as it lay hot and blue in the sun, among the ancient pinkish-lilac craters of barren Nevada. As I looked down from the sharp metamorphic crimson rocks of the Bloody Cañon trail, the color of this disk of water flamed like a meteor—a burning deep cerulean which may be seen but once on earth, one of the mystic impossible colors, like the purples of the Grand Cañon. And the lavender desert beyond, scarred with volcanoes extinct for ages, looked as old and dead as a landscape of the moon.

On breaking camp at the Meadows we plunged into the wilderness indeed. The flimsy bread-baking stoves were folded away—from this time canned goods and hard-tack were our fare. And each tramper's fifty pounds of baggage was cut down to twenty, two persons sharing one dunnage-bag, while the rest were packed off to await us at the village of Tuolumne. We followed the crippled old adventurous Tioga Road back for a two-days' tramp and then struck into stern, steep, and half-obliterated trails. Even Chinese taciturnity was broken by these impossible little trails, which were always the longest distance between two points, and of an inexhaustible variety of roughness. One day Charley Tuck's horse—for the chief cook always rode—almost broke his leg on some precipitous rocks, and the impassive Oriental murmured, "Heap dam bad tlail—killem lady!"

But difficulties became a stimulus in that mountain air, under those lofty pines. The weak grew strong, and the strong became invincible. Men and women made knapsack trips, young girls tramped over a hundred miles in a week, and in all the company never a creature, even to the horses, was ill. So we pushed on easily about fifteen miles a day toward that lesser Yosemite, now threatened with destruction, the Hetch-Hetchy Valley; one day getting lost and straying around through the pines a weary twenty-five miles before emerging for a late supper at Hog Ranch, a private domain now just outside the park boundary. Near noon on the 23d of July we walked to the edge of a large rock and saw a lovely Vale of Cashmere sparkling below us in the sun, its bright river patterning the green meadows with most intricate windings. Gray mountains on all sides walled it in, except at one narrow end where the river slipped through, and between their crevices tall slim waterfalls sprang to the grassy floor. Down into this secret valley we marched, and wound three level miles through flowing green grasses shoulder-high—the only human things between those granite walls, where never a hut nor a spade marred the locked inviolate wilderness.

Our camp here beside the lower Tuolumne River, now broad and deep as well as swift, was the most beautiful of all. Three days were ours of enchanted wanderings—up the Rancheria Creek, back to the Little Hetch-Hetchy Valley, across the river and under the cliffs; and three nights of enchanted sleep under the high pines and the stars, with the full moon mounting late over the lofty granite shoulder of "Kolana," and looking down serenely on the human intruders in her quiet world.

Late on the third day our twenty hardiest mountaineers emerged from the Grand Cañon of the Tuolumne, their flesh scratched, their clothes begrimed and tattered. The three women wore knickerbockers or close bloomers—no skirts; and all—men and women alike—carried, slung and strapped over the left shoulder, the slim seven-foot rolls of bedding and provisions which had burdened them for four days, while they were tearing through thickets and scrambling up and down vertical rocks and swimming the deep swift river. Some day the Government will cut and blast a trail through this great gorge, and give its spectacular beauty to the world.

On July 26th we climbed out of the Hetch-Hetchy for the home-stretch of five days to Bret Harte's village of Tuolumne. Two days we camped at Lake Eleanor, near the northwestern corner of the park—a glassy sheet of pure warm water in which we dipped and swam, and whose wooded and rocky shores we explored. Then on at four o'clock one morning through forests and lovely valleys to our last camp at Reed River. By this time we had passed the park's boundary, and the next morning, as we marched toward the lumber-camp whence we were to take a logging-train, the great pines and cedars lay prone and stripped around us. The pain of their degradation was sharp and fresh in each of us like a wound; each felled giant seemed the victim of a separate murder. For weeks these mighty citizens had been our friends—by day companions, guardians by night; and now they lay humbled, helpless, under the staring sun. The glory of the wilderness lay behind us; once more trains and turmoil, clothes and vanities—all the foolish frenzy of civilization! It was in a mood of tragedy that we chattered gayly with the loggers, and mounted the rough plank seats nailed for us on their open cars, to ride downgrade in the burning sun to the little mining village of Tuolumne. There the citizens turned out *en masse* to laugh at our battered costumes as we trailed into the pretty inn for supper, and took possession of the special train that was to deposit us in San Francisco in the morning.

We had tramped two or three hundred miles and explored a small part of the nation's spectacular playground. We had slept under a few of its great trees, beheld a few of its thousand lakes, forded a few of its innumerable streams, climbed a few of the chain of white granite mountains which guard it by day and lock it in by night. For a month we had possessed the earth in her grandeur, beheld her in all her glory of snowy peaks and soft green valleys and vaporous cataracts. She had been still for us, she had whispered in pine-tops, she had thundered in falling waters. And we were glad that all the world and all the ages would follow us to the wonderland, but glad still more that we had possessed it before its ways are made smooth for all the world.

FROM KERN CAÑON TO GIANT FOREST.

THE CHRONICLE OF A KNAPSACK TRIP.

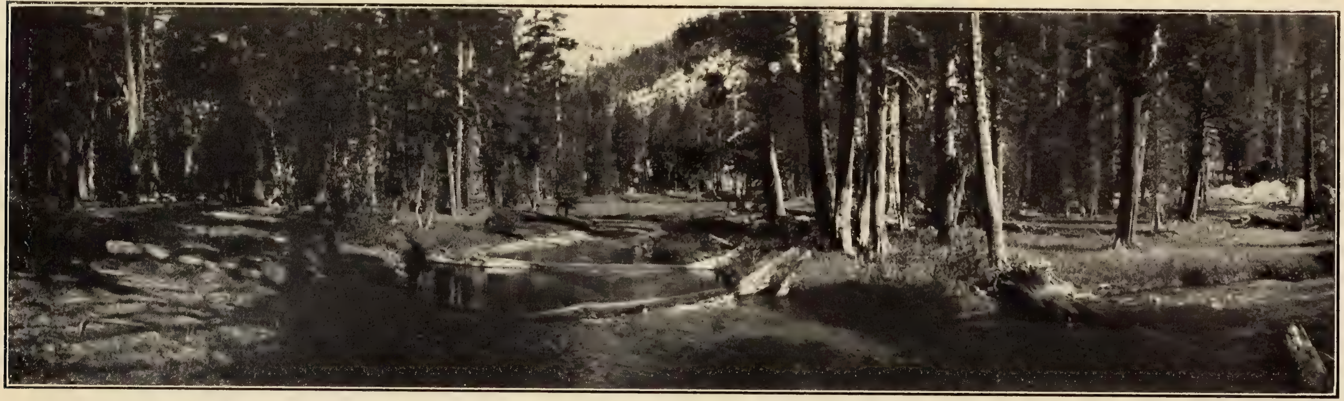
By Wm. Conger Morgan.

When the Sierra Club left the Kern Cañon last summer, the main party, with the pack animals, climbed the steep trail up Coyote Creek, rambled through the alpine meadows at Farewell Gap, made camp in the shadow of Saw Tooth Peak and again at Redwood Meadows. But two score of us trampers took the short-cut up over the Chagoopa Plateau, across the Big Arroyo and up Lost Cañon, over Black Rock Pass and down Cliff Creek Cañon to the Giant Forest, where, joining with the main party, we heard for the last time that season the "call of the wild." It is the log-book of this latter journey which is appended here, for brief and simple as was the trip, yet it was replete with the pleasure that dwells beneath the evergreen shade of the mountain-sides.

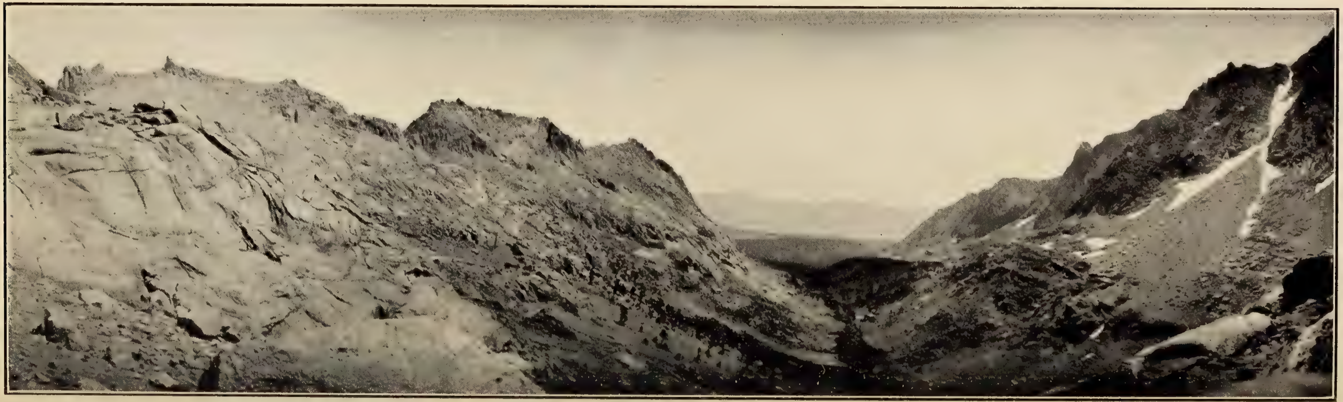
The excitement began some time before the start was made when the captains of the four parties were summoned before the commissary general to receive their allotted provisions, for on a knapsack trip, ten is about all that can be accommodated in one mess. Every member of each party was present for the apportionment of provisions and outfit among the individual members, the packs were made up, and all was ready for the start.

The pack-train put us up the first steep fifteen hundred feet of the trail leading up Funston Creek to the Chagoopa Plateau, and late in the afternoon of July 21st we shouldered our burdens and the trip began. There was much shifting of packs and adjusting of straps as we ascended to the Upper Funston Meadow, and to some of us the first three hours' tramp seemed longer than any of the succeeding days, lovely as it was in the evening light. The scarlet gilias stood like flaming torches beside the trail beckoning us onward, and as we climbed we left behind us the long-leaved yellow pines and entered the fragrant shade of the firs. When we reached the plateau the sun was near the horizon and the silent company of tamaracks, standing like a picket guard around the meadow, were casting long bars of shade across the grass. Two parties, the "slow-goers," were to spend the night at Moraine Lake, on whose crystal surface there appeared reflected every tree and stone, even the distant Kaweahs. The rest of us turned to the south and scrambled down the steep sides of the cañon into the Big Arroyo. The short twilight of elevated regions was accentuated by our descent from the sunlit heights into the darksome valley, and we had scarcely time to gather in the night's supply of firewood and call in the stragglers before darkness was upon us.

With the exception of the one spot where precipitous walls of rock attempt to block the stream as it comes cannonading from the gorge and plunges headlong into the Kern, throughout its whole course the Big Arroyo, though deeply cut, is an open cañon. From the more gentle slopes on the western side, streams come tumbling down from the Kern-Kaweah Divide every mile or so, each carving for itself a side cañon. The ascent of Lost Cañon presents little difficulty for man or beast. Climbing past the long series of cascades down which Lost Creek tumbles into the Big Arroyo, we were soon passing through the beautiful gardens and forests of Lost Cañon. From wall to wall lies a flowery meadow, pleasantly shaded with groves of tamarack pines. Through it, flowing in wide, tranquil curves and stretches of diminutive rapids, runs the musical stream, whose voice spoke with a vain allure to our fishermen, no trout ever having been planted there. Traveling onward, past the meadows, our climb gave us a succession of magnificent views looking back across the hazy cañon of the Kern. Black and sharp against the early morning sky rose Cirque Peak, Langley,

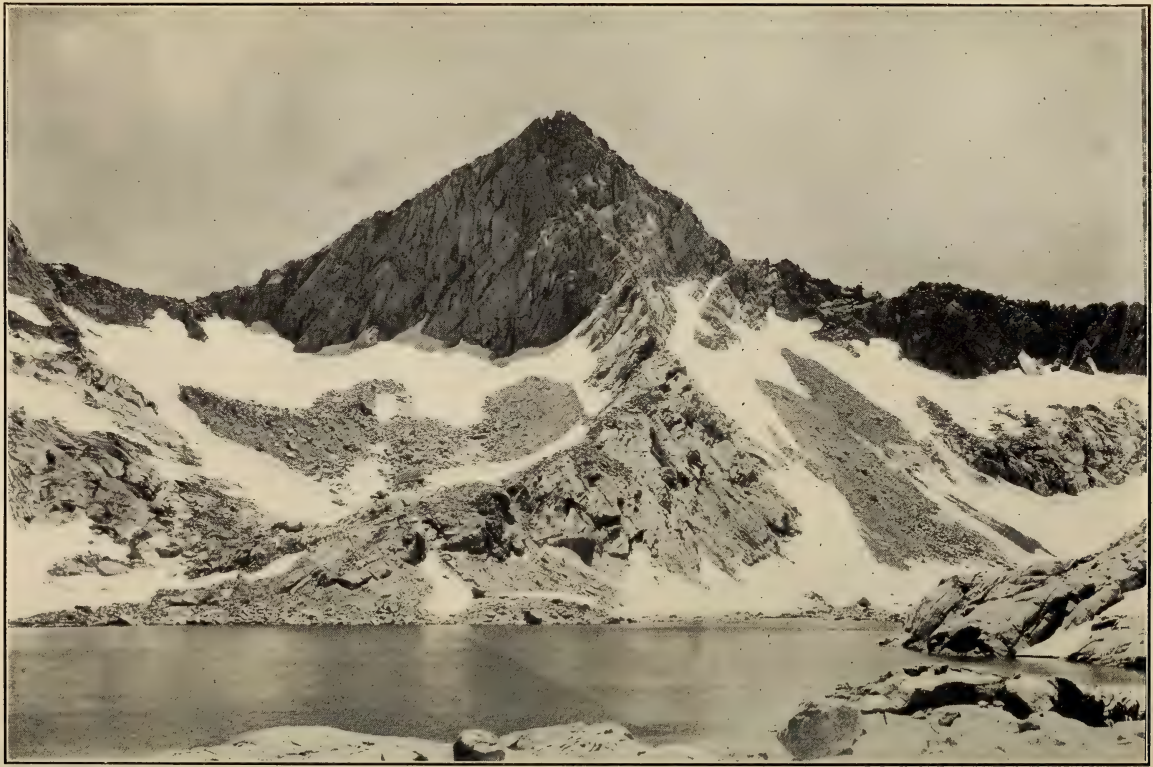


THE BEAUTIFUL GARDENS AND FORESTS OF LOST CAÑON.



TO THE EAST LAY THE EXQUISITE LITTLE MEADOWS AND WOODLAND OF LOST CAÑON—FROM BLACK ROCK PASS.

From photographs by E. T. Parsons, 1908.



THE SHARP PEAK OF SAW TOOTH FROM COLUMBINE LAKE.

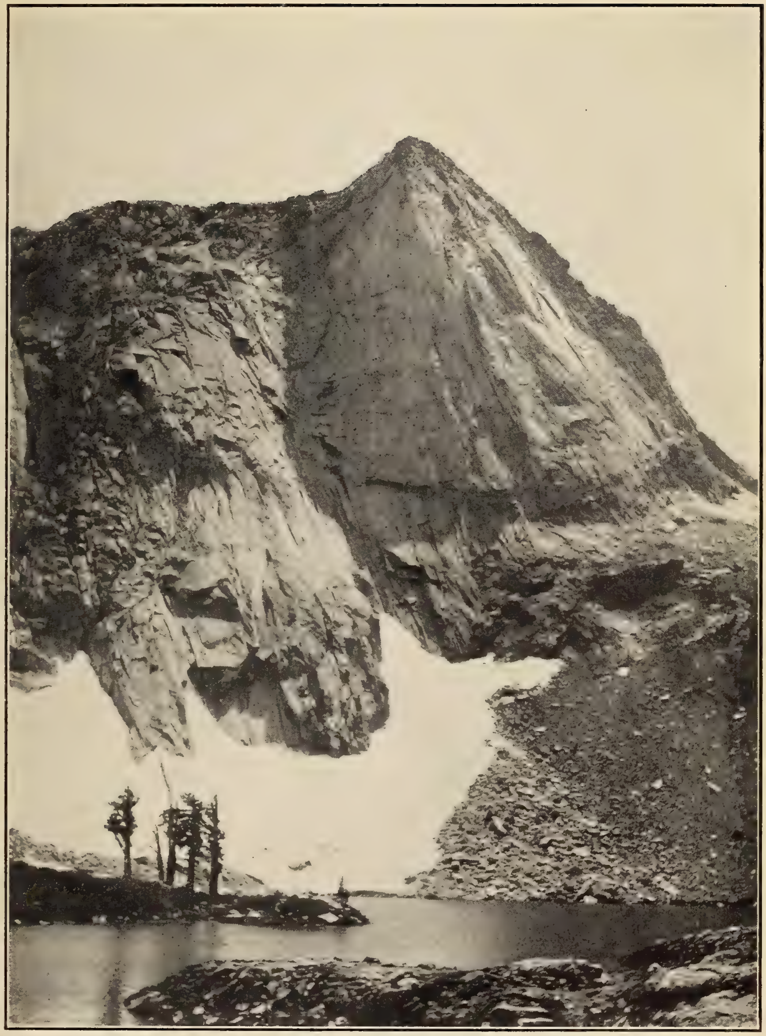
From photograph by W. L. Huber, 1908.

Le Conte and Guyot. Above our heads as we trudged along towered the jagged pinnacles of Mount Needham and Saw Tooth Peak, which, mantled in black storm clouds and most marvelously gilded by the setting sun, we had seen on the night of our camp at the foot of the Red Kaweah.

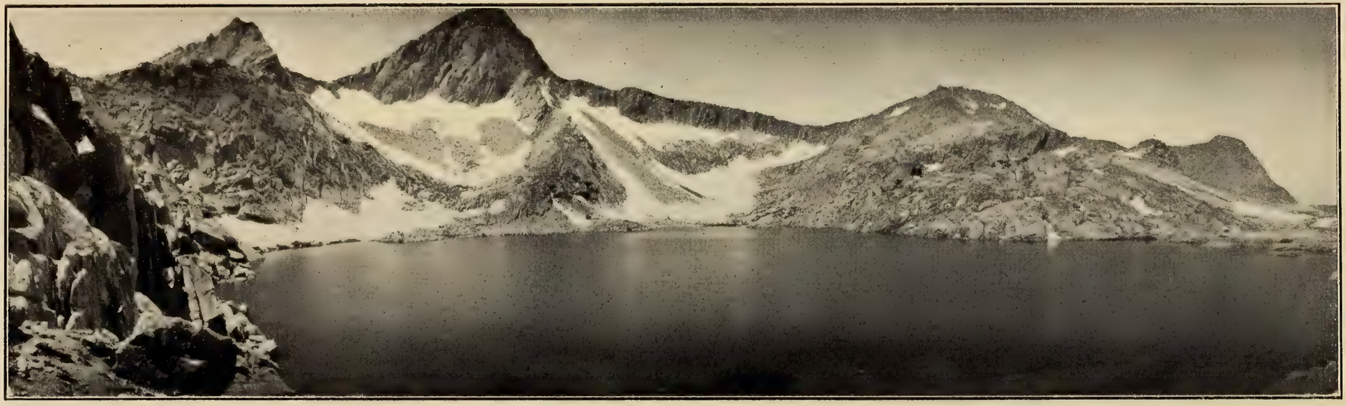
The head of the cañon is boxed in by a steep rise of five hundred feet. Surmounting this, we stood upon Black Rock Pass. The panorama that greets the eye is superb and varied, especially from the ridge just to the north. Beyond the barriers that rise northward nearly a thousand feet above the pass lie the Five Lakes, thrice repeated, and beyond them, across the Big Arroyo, the twin clusters of the Kaweahs and the ruddy ridge of Red Spur. To the east, at our feet, lay the exquisite little meadows and woodland of Lost Cañon, the abode of the tripping deer and the shambling porcupine, and to the west the valley of Cliff Creek and the watershed of the Middle Fork of the Kaweah. Southward the view was shut in by Needham and the sharp peak of Saw Tooth, in whose shadow, cradled on the top of the pass, barely removed enough to prevent its slipping over the ridge. lies Columbine, a gem of mountain lakelets. Like a circle of spears on all sides rise pinnacles of ragged rock which, reflected from its surface, contrast strongly with the mantle of snow which dips beneath its azure waters. A solitude of rock and water and snow and sky it seems, yet from the rock sounds the cheery whistle of the marmot, from the sky the twitter of the leucosticte [rosy finch] and, snuggling close to the snow in a sheltered sunny nook, the mountain daisy blooms.

Four or five other lakes nestle in little basins just below the pass. Lying at different levels the higher cascade into the lower over precipices or rounded bosses of rock that make difficult going for foot-folk and are quite impassable for pack-animals. The bones of a couple of animals bleaching on the upper ledges sufficiently attested that some one had come to grief there, unnecessarily so, as the trail, swinging far to the north, close under the walls of the cirque, avoids the dangerous belt altogether. The great difficulty in this cañon lies in picking up the end of the trail at the precise point where its assistance is most needed. This is particularly true to the traveler making his way up Cliff Creek, as at the foot of each boss, or precipice, there is a broad bench of meadowland criss-crossed with a maze of cattle trails. In each case only patient search discovered the trail close under the northern wall. Altogether the pass is not to be recommended for pack-trains except under the skilled and patient guidance of an experienced mountaineer.

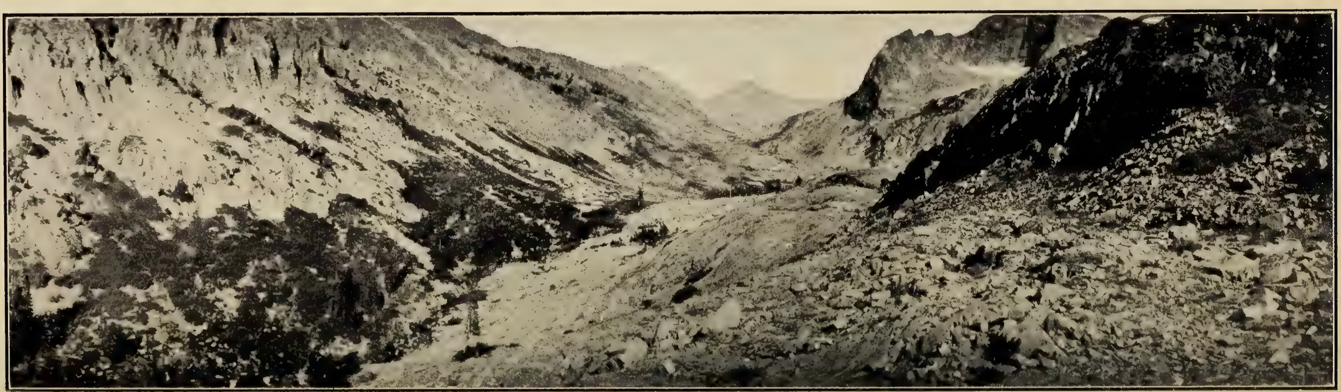
Cliff Creek contains some of the sharpest and most angular slide-rock that the writer has ever experienced. We needlessly ascertained this fact in attempting to cross-cut the trail, which is generally smooth and well rounded from its continual use by cattle. The waning day sent us down Cliff Creek at a lively pace, for we planned to camp for the night at Redwood Meadow. We reached this charming spot about sunset, that mystic time when sequoias are seen at their best, for the huge cinnamon shafts tower up into the leafy shadows like pillars in a temple. Indistinct in the twilight, the waxen spikes of the lupines stand like tapers on the altar, while soft and clear throughout the darkling aisles of the forest sounds the magic flute of the woodland, the vesper song of the dwarf hermit thrush. One would fain linger in such a spot under the spell which eventide throws over all nature, but the seeping streams were warm and uninviting, so we hastened on and just at nightfall came upon the gurgling waters of the North Fork. For an hour the campfire shone on the circle of faces and cast a flickering light into the recesses of the forest. Then each scooped for himself a little hollow among the stones and crawled into his sleeping-bag. For a moment or two the stars twinkled and birds of the night called to each other from the leafy branches over our heads. Then all was dark and all was still.



A PORTION OF ONE OF THE WALLS OF CLIFF CREEK.
From photograph by W. L. Huber, 1908.



COLUMBINE — A GEM OF MOUNTAIN LAKELETS.



LOOKING UP CLIFF CREEK CAÑON.

From photographs by E. T. Parsons, 1908.

Crossing North Fork and Deer Creek next morning, we struck the new trail to Giant Forest. It skirts the base of Sugarbowl Dome without cutting contours until Buck Cañon is crossed. Then begins the ascent which ends only at the top of Seven Mile Hill, from which point the old and the new trails run side by side. For us this four-thousand-foot climb was a tough one. The day was hot and humid; the trail dry and dusty. We made the climb in the middle of the day—the price we paid for a couple of hours' "beauty sleep" that morning. But neither sultry air, glaring sun nor thirsty trail depressed our spirits as much as the fact that we were entirely unprepared for what we experienced. We had been told of the fine new trail that did away with the steep zig-zags of the old. As often, therefore, as the trail bore off to the west, the step quickened and the stride lengthened in the hope that we were now on the shady stretch that would lead to the far-famed sequoias. More than a score of times did our hopes fall as the trail turned back into the sun again and began the climb once more.

The new trail is beautiful—for pack animals—and so safe that a fractious mule cannot fall his own length, but anything with more spirit than a burro will find it monotonous and disheartening. Having experienced the new, next time the writer would try the old trail by Alta Meadows, which though rougher and more dangerous, has distinct scenic value.

It was such a pleasant variation from the steady up-hill pull of the morning, that the descent from the ridge of Panther Peak was made at a swinging pace; and forty-eight hours after we picked up our packs in the Kern Cañon, we threw them off in Giant Forest, certainly not a bad record for a knapsack party, some of whom were women.

Of the days spent in the shade of the sequoias little need be said, for the delight and charm of this spot is well known. Our morning rambles startled the deer in the leafy glades and sent the quail scurrying to cover on the sunny slopes. We wandered idling through the forest and waded waist-deep through acres of lupines whose delicate perfume filled the air and attracted myriads of bees, the drowsy hum of whose wings lulled one to slumber at the noon hour. From Moro Rock, that huge dome of granite, we looked across the valley of the Middle Fork of the Kaweah toward the Great Western Divide, and from Sunset Point watched the shadows fall. Flowers there were, the old-time favorites that everybody called by their first names and others so little known that no one knew any gossip about them. They said that the fishing was good and showed a couple of dozen fishlings caught in a far-away stream—to us who had come from the Kern! About the big sloping rock to the south of the store we slept and on it built our campfires, the pot-holes which freckle its surface affording the best kinds of seats. A score of people there are who can tell of one so large that there were forty feet inside the brim. Strange tales there were, too, of how the animals got in one night and ate the melons and cake and opened a can of cream to go with the coffee. Two days and nights were spent amid pranks and pleasures, then came the main party with its official chronicler who put an end to the literary career of a scribbler-errant.

UP FROM "THE LAND OF LITTLE RAIN" TO THE LAND OF SNOWS

BEING THE JOURNAL OF A SLEDGING TRIP UP MOUNT WHITNEY IN WINTER.

By J. E. Church, Jr.

Hunter's Camp, 8050 Feet,
Thursday, March 2, 1905.

We are sitting by the campfire after sunset in a gorge on the eastern flank of Mount Whitney at the meeting of the desert and the snows. Huge pines form our canopy, while the ground is covered with pine needles and enormous boulders. The walls of the gorge rise three thousand feet above our heads. How ambitiously that bit of tree life is clinging beneath a pinnacle to catch the last glint of the western sun! A trout stream is brawling through the snow down in the brush. A large trout was seen to-day vainly attempting to surmount a cascade. A strenuous trip he must have had from the valley five thousand feet below.

The temperature of 42° F. is refreshing after the journey through the desert. Only yesterday I started southward with the argonauts of the twentieth century. They were setting forth to penetrate the depths of the torrid Death Valley, I to scale the frigid mountain-tops. As twilight deepened we parted company. They sped eastward to the mining camps, I journeyed southward through the night down the long trough of Owens Valley where my companion awaited me. As the waning moon was rising over the high wall of the Inyo we met and journeyed to his home in the little oasis of Lone Pine nestled at the base of Mount Whitney.

As day dawned, the granite walls of the High Sierra slowly emerged from the shadows. A thin wisp of cloud floated away from the point of Whitney as the sunlight touched the summits. Our destination was revealed. The immense heights that we were to scale were dwarfed by the distance of the range, but the steepness and the contrast of color were both there. Peeping low down through the green of our oasis was the somber brown of the Alabamas, the last tiny range of the desert. Above it rose the gray of the Sierra, the sky line one long succession of saw-like points. The height and the majesty of them we were to appreciate as the days passed by.

Of snow there was apparently but little, and only two passes were dreaded by my companion and guide. He had blasted a trail to the summit under conditions that try men's souls. I had tested a small but efficient outfit for winter mountaineering and felt confident that we could live in comfort for ten days with the equipment and supplies we could haul up the mountain face. In the joint experience of the two there was the assurance of success.

Marsh, my companion, is English and gritty; he also is a droll fellow and enlivened the day. Our route traversed the Alabamas with their sculptured rocks and Lone Pine Cañon, guarded by a majestic peak of similar name. We had pushed the horses up the mountain far beyond our expectation and by dint of manœuvering we had driven them over the snowfields until we had gained the forested nook at the foot of Lone Pine Falls. I hastened to send the French-Irish lad back with the animals for fear that darkness should overtake him in the cañon. I did not realize that my vision was darkened by wearing smoked glasses. My companion suggested that we put green goggles on horses to make them think that straw was hay.

Marsh is a desert man by inclination. He has made a bed for himself on some needles under the lee of a boulder despite my suggestion that he try the snow.

Marsh is going to bed and has wormed his way into the sleeping-bag as laboriously as a snake works his way out of his winter skin. I inquired about the pillow sack in the foot of the sleeping-bag, placed there to protect the feet against frostbite. He calmly informed me that he had his feet on it all right. Shades of Jack Frost! Feet on top like Mike who took the pill box instead of the pills. I instructed him concerning the hole in the pillow.

"The shadow of a rock in a weary land"—such is our shelter to-night under the lustrous stars. I have the shovel ready for coyote or bear, and all the pantry near at hand except the frying-pan and the can of tomatoes. They can eat only the label of the can. We shall save the substance.

Friday Morning, March 3.

I lay awake last night. The sleeping-bag was too warm for the temperature of 35° F. which prevailed. I planned a weather observatory for the summit of Mount Whitney with monthly post and stations of refuge for the courier in case of storm. In summer these stations could be used by stout or easy travelers who desired to make a pilgrimage to the top of the United States. The observer could keep the snow out of the trail to timber line for exercise, if necessary.

We have eagerly discussed our route this morning. We are camped at the junction of two immense gashes in the mountain. The one on the right leads by cyclopean terraces directly to the base of Mount Whitney and leaves the traveler gazing impotently up a face of rock which rises sheer four thousand feet above his head. The apex of Whitney with its outlying saw teeth can be seen up the gash and remind one of the dome and towers of Saint Peter's whose front could more easily be scaled than could this. The other gash, the continuation of Lone Pine Cañon, turns the flank of Whitney by affording the opportunity of scaling the range to the south of the saw teeth and gaining the summit of Whitney from the rear. At the junction of the two cañons stands a majestic crag, the peer of any in the range.

Our work to-day is to surmount Lone Pine Falls, now practically dry through the freezing of the mountain streams, and gain Lone Pine Lake where the river is wont to pause a moment in summer on a terrace in its downward plunge.

Friday Evening, in Camp on the Trail.

"As thy work, so must thy strength be."

We are glad to settle down here by a mahogany campfire on the steep hillside. Our canopy is an ancient fir tree whose branches are so round, so hoary, and so sturdy that they suggest the Druids. What a fitting tree to build a Hunding's Hütte around!

We are tired to-night. We have climbed 3500 feet to gain 1000 feet and elevate our camp to this point. This does not include the 3500 feet down nor the struggle with wet snow, into which we often sank above our knees. Had it not been for our rubber leggings, we should have been compelled to retreat.

Our method of hauling our outfit was ludicrous but inevitable, owing to the nature of the slope traversed. We hauled and pushed until Marsh was blind; then hauled on the hundred-foot life line, following that by dividing our stuff into sections, which we packed on our shoulders, the sleds riding ignominiously bottom up. So steep was the grade that we often rose our height within our length. On the last carry of only one hundred feet I took off my mittens, laid down my alpenstock, and was on the point of removing my colored glasses, so exhausted had I become.

The scenery yesterday was grand. To-night it is more congenial. The night is mild. Lone Pine Lake, where we shall make our base camp, is only eight hundred feet above us. No fear of not gaining the summit, even in storm, providing the slopes are passable.

Saturday, March 4, at Dawn.

"Sleeping 'neath the old pine tree." Its branches are just growing ruddy in the morning glow. The western branches are somewhat shorter—evidence of high and exposed altitude. A wonderful old tree! The stream sounds in the steep depression below like wind in the pines. The landscape is wintry. The gentler slopes of the mountain are laden with snow. Dull greens cover the steeply rising bed of the cañon, with sentinel pines far up the face of the cliffs. One old tree, dead above, plume-shaped below, stands against the palisade behind us—an artistic creation. Part of it towers visually above the gray rock face. Large granite boulders are around us, bedded in chinquapin brush. The apex of the cañon wall on the south we have named Mount Marsh. The noble crag now near at hand we have named Crag Alexander Winchell in memory of a noble scientist and teacher.

On the Trail.

Crust hard above 8000 feet! Yes, in the northern Sierra or on northern exposures. Here solid only in the early morning. Such is winter mountaineering in the subtropics. My Canadian snowshoes would be welcome.

Saturday Evening, Lone Pine Camp, 9800 Feet.

We have gained the terrace of Lone Pine Lake, and are camping in a thick grove of tamaracks. The lake is only partially frozen over. Marsh has insisted on shoveling a neat little suite of holes in the snow for bed and living rooms. The snow here is only eighteen inches deep.

Mr. Bonnett's thermometer shelter is sitting on a rock near by, peeping from its hood of snow. Poor fellow, so this was his Waterloo in early October! The old peak frowned upon his effort to place his instruments upon her summit. But then, he went all unprepared for sudden storms. May she be more gracious unto us.

We have advanced our camp from 9200 feet altitude to 9800 feet, but we were compelled to make so many return trips that our total was nearer 1500 feet.

What beautiful views! Mount Marsh wore a cloud cap yesterday, and to-day we are in storm. Crag Alexander Winchell, which now bends over us, is almost a second El Capitan. A wisp of cloud is hovering round its brow. High up its flank is a gateway through which Saw Tooth Crags can be seen. Just within the gateway lies Mirror Lake and Camp Celeste. We may not enter through the gate directly. This is reserved for the fowl of the air. But we may climb up another way and gain its portal.

What monstrous boulders are lying strewn on the mountain-side where we slept last night. Some are seventy-five feet long. One might have jostled us had it fallen. To-day a rock fell from the face of Crag Winchell. There were three sharp reports accompanied by echoes on the heights. Then a fragment continued its way down the face of the crag, leaping from point to point with a sharp report like the blow of a giant stone hammer, repeated as slowly as the ticking of a clock. Thirteen blows or more were struck before the rock found its resting place on the cañon floor. There is room enough, however, for us all here. So the reports gave us only pleasure.

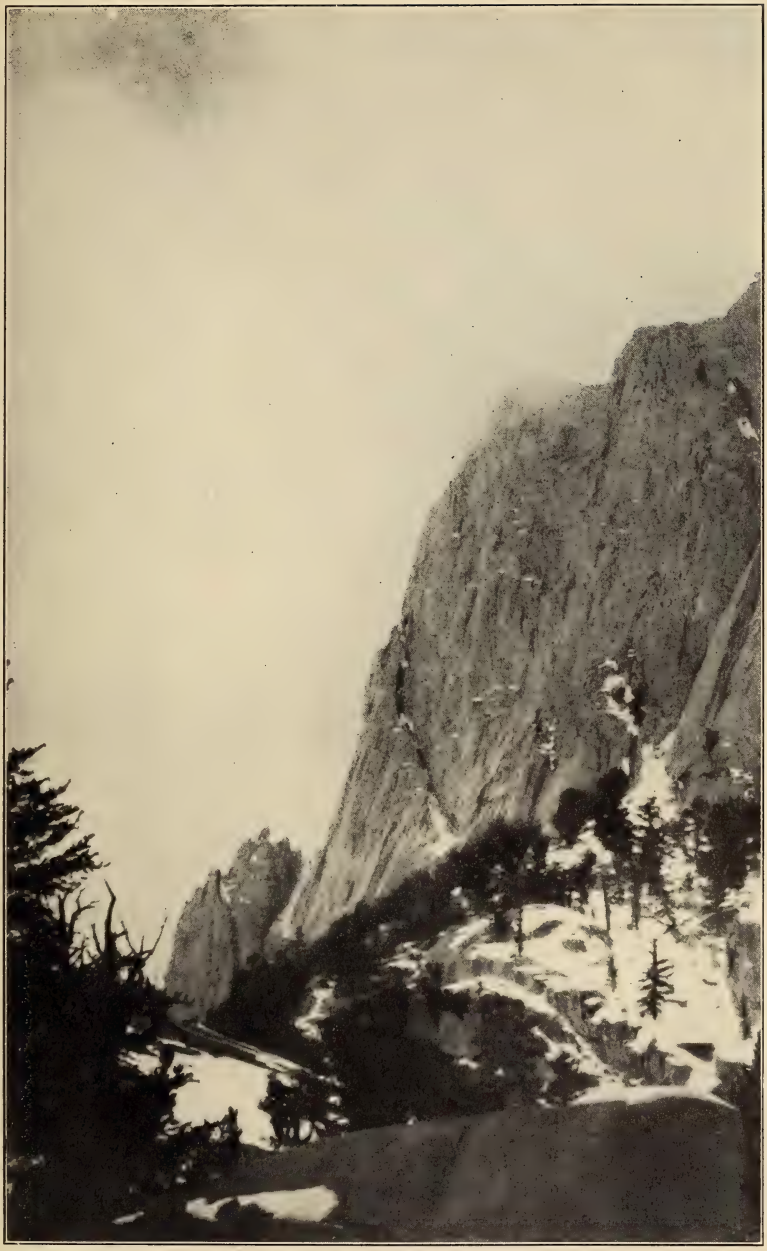
We have a good base camp now. To-morrow we shall make our advance camp at Mirror Lake, and then make the dash for the summit.

The scenes here are magnificent. Life is one long delight, despite the heavy packing.

Another lesson from the tamaracks. Two old fellows near by are standing shoulder to shoulder, and so closely that they are square rather than round. They are willing to concede something in return for the mutual advantage of each other's society.

SUNDAY NOON, MARCH 5, CAMP CELESTE, 9350 FEET.

The trip up from Lone Pine Camp has been comparatively easy. The portal into which we passed is in reality a long glen, known as Ibex Meadows on account of the numerous horns of mountain sheep found there. At its upper end is timber line. To the left is a frozen waterfall of emerald hue. To the right is a tiny shelf containing



CRAG ALEXANDER WINCHELL FROM LONE PINE CAMP.
"The noble crag now near at hand we have named Crag Alexander Winchell."

CAMP CELESTE.

MOUNT MARSH.

"Up whose knife-edge of snow-capped rock lay our course to Lone Pine Pass."

a bunch of timber, to which access is gained over mounds of snow. Here is Camp Celeste. Just beyond in the basin of a giant amphitheatre lies Mirror Lake. Before the camp are palisades of granite, studded with a few sturdy pines which have gained a footing in the clefts of the rock.

The snow is falling much as it did last night, not much in quantity but the little balls fall upon my paper and hands rapidly enough to make me think that far more are coming. The clouds slide down over the crags, breaking into wisps here, spreading out into palls there, then after their force is spent, gradually fade out. The town of Lone Pine, far down the slit in the mountain, is bathed in bluish sunlight.

Verily, this is "The Land of Little Rain." Even the snow is sparse and dry. Mrs. Austin, who coined the epithet and brought fame to this land, lives near the mountain's foot.

Marsh is not feeling well to-day. This will account for his continued criticism of the sleds. The "go-devils" have now become "hang-back devils" and "roll-over devils." I suggested that what the Creator should have produced was a man, mule, and flying machine combined in one creature. He agreed that there might be room for inventive genius in this direction.

Our grove here is quite sheltered. We shall turn our sleeping tent upside down on some tamarack supports by the side of a boulder and stay out the storm.

SUNDAY EVENING.

In the shelter of the rock in the storm which has at last arrived in its full strength we sit and hope. It may be long or short, but to-night, at least, it has become a blizzard. The air is full of snow and the old tamaracks are powdery, while jets of snow are pouring from the rocks. The wind is whistling in the trees, and a fine sprinkle of snow is falling from our rock over us as we sit under its lee. The fire is casting its ruddy glow in defiance of the storm.

Marsh has become quite cheerful. The barometer is steady, and the barometric pains in his foot have ceased. Both indicate a speedy ending of the storm.

I can scarcely see my lines because of the water on the page. So I shall just push the pencil through it. The page will dry later.

This afternoon we went up the palisade to inspect the trail. Lone Pine Pass, where our route crosses the range at 13,000 feet, was faintly distinguishable in the clouds from where we stood above Mirror Lake. Across the amphitheatre arose majestic Crag Winchell, which broods over our camp.

Monday Noon, March 6.

Breakfast has just been eaten. Two inches of snow fell last night. The wind is still blowing moderately from the east. Masses of cloud are still passing. The minimum thermometer registered 12° F. above zero last night.

It was, therefore, no colder than at the altitude of 13,000 feet last July, when Marsh was constructing the trail. Zero temperature in a sub-tropical climate is certainly low enough, and Mount Whitney lies between two warm valleys.

The barometer remains steady at 10,400 feet.

The snow seems to be so dry that the cold does not make it pack readily. Its drift, moreover, is considerable. We can make the ascent unless warm weather starts the snow slopes to moving or makes them insecure.

I saw an eagle this morning as I lay in bed, soaring round the brow of Crag Winchell. He soon alighted there. He seems to have his eyrie on the crag. Marsh saw him soaring there two days ago, when we were at Lone Pine Lake.

My lips are very yellow and sore with blisters. I have tried court plaster, but unsuccessfully. I wish we had some tomatoes or other vegetables. We are saving our canned beans for the dash up Whitney.

MONDAY EVENING.

The storm with its rear guard of slowly passing clouds has gone. Now we shall follow. A cold wind, however, is on to-night.

I went to Lone Pine Camp this afternoon to bring up more flour and provisions, and a light tent. Our tracks of yesterday were drifted over in many places. The tracks of rabbits and squirrels were seen. Marsh says that a large snowshoe rabbit lives in the hills near Lone Pine. Their feet are covered with a mass of fur, and fluffy fur covers their bodies. Nature seems to have provided for them. I heard a bird to-day, but no more drumming grouse. This seems to be their mating season. As I was returning through Ibex Meadows, a faint halloo came floating to me down the mountain. My two hours' leave had elapsed, and Marsh was signaling. How weird the sound of the distant voice is when nature is so silent that the cracking of a twig sets the blood to surging.

Despite my weariness, I ascended the palisade to 10,800 feet to obtain a photograph of Lone Pine Pass and Crag Winchell. From this point the crag becomes a knife-edged spur terminating in a slight pinnacle. The wind had now risen and was sending the dry snow curling over the faces of the granite domes of which the palisade consists. The track of yesterday was covered, and I seemed to be wading in a mass of meal grown treacherous by concealing the icy, slanting granite surface beneath. The rope mesh of my Bavarian snowshoes alone made my footing at all secure.

I finally waded through it all to where the last rugged but battered tamarack defied the wind. Stout it was but short, and its few limbs symmetrically grouped like an umbrella top. Here on a boulder overhanging Mirror Lake I placed my camera. There was small space to work on, and the wind was stinging. Care had to be constantly exercised not to step backward into the yawning fissures nor slip forward into the amphitheatre below. I finally sat down on the boulder with the tripod astride my knees, but nearly succeeded in pitching the camera into my lap when I attempted to rise. I obtained, I hope, a fine cloud picture of Lone Pine Pass where the worst of our journey will be.

The trip to-morrow will try our endurance to the utmost. We cannot advance our camp much farther on account of the soft snow and the resulting exhaustion of plunging through it with heavy packs. We have left rope and creepers at Lone Pine Camp on account of their weight. We shall discard everything except the camera, the beans, and an extra pair of felt boots for emergency. Marsh, however, insists upon coffee rather than boots, but for me, feet against stomach most of the time, at least. Without feet we shall be at the mercy of the elements. Perhaps the strong wind may sweep away the drifting snow. A little delay might give us a better surface, for it is cold now. But Marsh is very anxious to proceed, and the provisions are almost gone. Ten hours up and back from here in summer—fifteen now for us, surely; so we shall start at daybreak.

5 O'CLOCK TUESDAY MORNING, MARCH 7.

The gale of yesterday abated toward midnight. The stars are brilliant. The wind has veered to the southwest. The ground is frozen solid, but the snow refuses to harden. We are now ready to make the final attempt.

TUESDAY EVENING.

We have met Mount Whitney's advance guard and retreated, but not without a skirmish. The snow was quite compact, after all, and we made fair time over it. At sunrise we could look down upon Crag Winchell. To the north lay Mount Whitney like a giant plateau uptilted toward the west. On its summit the monument could be plainly seen. But we were being forced to the south where the least steep slope of the amphitheatre gave access to the crest of Mount Marsh, up whose knife-edge of snow-capped rock lay our course to Lone Pine Pass.

So steep was the slope and so deep the snow that we often clambered over huge boulders whose height and depth were so concealed that we did not realize their size until the yielding snow let us slip back down their faces. Marsh had preceded me some little distance. When we were well up the knife-edge, I suddenly saw him standing in a tiny gateway of reddish brown rock to which a narrow path of steeply slanting snow afforded the only approach. This was the notorious slide to Consultation Lake which Marsh had feared. By hugging the wall and carefully tilting the inner snowshoe to work it through the narrow space left between my outer leg and the wall, I soon succeeded in gaining a place by Marsh's side in the pass. The barometer gave us the welcome information that we had attained the altitude of 12,950 feet, or only 1500 feet less than that of the summit which we sought.

To the westward, deep, deep below us, and extending, it seemed, almost across the State of California were frozen lakes, pinnacled mountains, and valleys, bare and desolate in the foreground and wooded in the distance—the whole one vast snowy panorama.

At our feet was a vast depression circling the Saw Tooth Crags and Mount Whitney, on whose flanks we stood. At the southern end of it lay the frozen Cottonwood Lakes, at the other Langley's Lake, near which passes the trail from Fresno to the foot of the Devil's Ladder, the only natural means of access to the summit of Mount Whitney. Our route lay along the western side of the Saw Tooth Crags where a ledge along the cliffs afforded scanty room for the Lone Pine trail to reach the head of the Devil's Ladder, where it joins the Fresno trail to the summit.

The field of snow below the pass slanted dangerously downward to the Cottonwood Lakes, but, trusting too much in our morning experience, we started to stamp our way across it. This time there was a strong crust below the drift snow, and our first plunge started ominous cracks in the snow above us. This meant avalanches. We immediately became more circumspect. Heel-thrust after heel-thrust, slowly repeated, as we faced outward and maintained a precarious balance on the slope, became exhausting, though we exchanged places every few rods. Often my pack overbalanced me, and a sudden fall inevitably resulted. But on every occasion the alpenstock, clutched rigidly by the head, was driven by the impact of my body its entire length into the snow and anchored me firmly. I sat upon it until Marsh stepped round my shoulders and beat a trail into which I could crawl to regain my footing. The slide of two thousand feet into the depression would have meant bitter exertion to return over such snow to our present level, and there was no wood nor had we more than a tiny lunch.

The next slope was quite safe. Here we found Lake View Camp, the old high camp of the trail-makers, with abandoned camp stove and logs of wood. I suggested that we build a fire and spend the night. But Marsh declared that staying here over night would become permanent.

So we hastened on, only to be almost immediately arrested by an ejaculation from him as he pointed to the next dangerous place—the ledge along the precipice. I offered to break the first part of the trail if he would break the second. But we soon realized that the condition of the ledge was dangerous far beyond expectation. The drifting snow had filled the ledge full and was even then sifting over the edge. For us to venture upon it would be to chance death in the abyss beneath, one to five. This was not a bad risk, however, but from a pinnacle that overhung the trail we saw that the ledge for fully a mile until it passed from sight around the shoulder of the mountain was in similar condition, and to continue would be to repeat the chance of going over every few rods. We had brought no shovel, and if we had the snow would have filled up the pathway behind us as rapidly as we cleared it ahead, or the snow would avalanche and carry us over the verge into oblivion, a kinder fate than imprisonment on the trail at 13,000 feet and higher on a winter night without shelter. We reluctantly decided that the remainder of the journey along this route was impracticable, and our decision was attested by the dull boom of a rock that had rolled from the ledge at our feet.

No, an observatory on the summit of Mount Whitney would not be feasible if the observer expected to come to town each week. An observatory could, however, be erected on the height where we stood, at 13,250 feet, without any great risk and with almost the same advantages that Mount Whitney would afford.

Our return was easy. The treacherous snow had hardened. But in the distant west masses of cloud were piling as high as heaven in fantastic forms like volcanic fires. Marsh had noticed the same formation the previous summer.

Mount Whitney reminds me more of the Kaiser Gebirge and the Bitter Root Mountains than any other I have seen. They are shark's teeth set on end. Yet I believe that Mount Whitney can be scaled by way of the depression on the west and the Devil's Ladder leading upward from it, despite Marsh's conviction that the ladder cannot be ascended in winter on account of the steep wall of snow that covers its terraces. If a crust forms there, steps could be cut up the face of the snow. To accomplish this our outfit must be carried to Lake View Camp and preferably to Langley's Lake, and will require five days more, at least. This attempt must therefore be reserved for a future season. Our time has expired and our provisions are almost gone. With packers we could have accomplished much more, but half the pleasure of the trip would have been sacrificed.

LONE PINE, FRIDAY, MARCH 10.

Tuesday night, following our attempt to gain the summit, a wildcat stole the bacon from the head of our bed.

I could have tweaked its nose from where I lay, had I been awake. Marsh left scraps for it as assurance that he bore it no ill will. Guess it was time for us to depart.

Late Wednesday morning we started down the mountain. Ibex Meadow was firm for once. Those "go-devils" became pretty good little devils — stout little devils. They rolled over like cart wheels, side over side, end over end, down slopes through thickets along the bottom of the cañon. When the slope was fairly steep, we rode on the pack; when too steep, the sled rode with its runners in the air. One sled stood the test to the end. I nearly coasted over Lone Pine Falls in my enthusiasm. From Hunter's Camp, after hanging the loaded sleds in a tree, we tramped to Lone Pine. As we came up the lane through the willows in the darkness, a silent figure waiting at the bars came swiftly to meet my companion, while a little tow-headed fellow in the home gave him a hug that was enthusiasm itself. I was glad then that I had not urged him out along that cliff. The exultation of success is a strong incentive to daring, but the home call is stronger.

SIERRA CLUB BULLETIN.

PUBLISHED JANUARY AND JUNE OF EACH YEAR.

Published for Members. **Annual Dues, $3.00.**

The purposes of the Club are:—"To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada Mountains."

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REPORTS.

REPORT OF THE SECRETARY.

May 2, 1908, to May 1, 1909.

Great vitality is a marked feature of the Sierra Club's present existence. There has been a net increase of 101 new members during the past year, the total membership now numbering 1103. A total of 205 new members joined the Club and 104 were dropped from the list by reason of death, resignations, and non-payment of dues.

The Club was never stronger financially. Though this past year has been one of unusually heavy expense, being the first year since the fire during the whole of which we have been paying rental for a Club room and the salary of an assistant who has charge of the room, the balance in the Club Treasury is greater than it was last year.

Now that our finances are once more firmly established, we propose spending a small amount of our funds each year in the construction of necessary trails in the Sierra. By means of co-operation with the Forest Service and county officials, etc., we expect to increase several fold the amount to be expended on such work. For example, we plan to spend $250.00 this Fall to aid in the construction of a much-needed trail from the King's River Cañon past Mist Falls up to Paradise Valley. We hope to secure a total of $1,000.00 for this work through co-operative contribution. This will build a first-class trail and open up by making easy of access a splendid territory tributary to the main King's River Cañon.

Miss Lydia Atterbury, a member of the Club, who is very familiar with the Yosemite region, has been secured as custodian of the Lodge for the summer. The eighteen splendid oak chairs, which were the gift of Mr. Jas. Mills, of Riverside, have been installed in the Lodge and are a most desirable addition to its furniture.

The Outing this year to the Yosemite National Park has awakened greater interest than any previous trip. The list of applicants is long since complete, and it is greatly to be regretted that our inability to handle comfortably a larger party will necessitate refusing a great many who will desire to go with us.

The interest in the local walks is also unprecedented. There have been thirty or forty on most of the walks, and once, when we enjoyed the hospitality of Mr. Wm. Kent and rode to West

Point on the train and then walked to Willow Camp, there were sixty-eight participants.

There is plenty of work to be accomplished in the Sierra, and it is gratifying to know that the number of persons who are interested in aiding in the accomplishment of that work is rapidly increasing. We want our present members to interest others who are in sympathy with our objects, and get them to become members also. Respectfully submitted,

Wm. E. Colby, *Secretary.*

REPORT OF THE TREASURER.

May 9, 1908, to May 1, 1909.

To the Directors of the Sierra Club.

Gentlemen: I submit the following report of the finances of the Sierra Club for the year ending May 1, 1909:—

GENERAL FUND.

Receipts.

Cash on hand May 9, 1908		$1,464.27
Cash received from Wm. E. Colby, Secretary—		
Dues	$3,111.30	
Advertisements (June, 1908, and January, 1908, Bulletins)	615.00	
Rent of club-room	120.00	
Sale of Bulletins	6.60	
Sale of Club pins	40.10	
Refund of *Appalachia* postage advanced	118.42	4,011.42
Total cash received		$5,475.69

Expenditures.

Publication of Bulletins Nos. 38 and 39	$1,466.20
Salary of regular attendant for twelve months	600.00
Stamps and stationery for general correspondence, etc.	422.95
Rent of Room No. 302, Mills Building, for twelve months	360.00
Stamps for mailing Sierra Club Bulletins and *Appalachia*	309.05
Le Conte Memorial Lodge expenses	258.36
Advertising expenses	146.25
Additions to furnishings of room and to library	75.26
Printing of circulars, notices, ballots, etc.	55.00
Express and telegrams	36.70
Carried forward	$3,729.77

Brought forward	$3,729.77
Purchase of Club pins	31.00
Public lecture	14.60
Taxes	4.39
Walk advertisements in newspapers	1.80
Miscellaneous small expenses	24.62
Total expenditures	$3,806.18
Cash on hand May 1, 1909	1,669.51
	$5,475.69

PERMANENT FUND (LIFE MEMBERS).

Balance on hand May 9, 1908	$ 519.62
Deposited since May 9, 1908	100.00
Interest accrued since May 9, 1908	18.68
Total on deposit in Security Savings Bank May 1, 1909	$ 638.30

Very respectfully,
J. N. LE CONTE, *Treasurer.*

NOTES AND CORRESPONDENCE.

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comment and suggestion on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, fish, forests, trails, geology, botany, etc., of the mountains, will be acceptable.

The office of the Sierra Club is Room 302 Mills Building, San Francisco, where all Club members are welcome, and where all the maps, photographs, and other records of the Club are kept.

The Club would like to secure additional copies of those numbers of the Sierra Club Bulletin *which are noted on the back of the cover of this number as being out of print, and we hope any member having extra copies will send them to the Secretary.*

British Embassy, Washington, May 10, 1909.

My Dear Sir: I am obliged by your letter informing me that I have been elected an honorary member of the Sierra Club. I appreciate the compliment very highly and beg you to be good enough to convey my thanks to the Club. To one whose chief recreation and pleasure in life has been the practice of mountain-climbing, it is particularly agreeable to be associated with a body which has done so much for the exploration of one of the noblest mountain ranges in the world and among whose members there are so many climbers of brilliant eminence.

Believe me to be,

Very faithfully yours,
James Bryce.

W. E. Colby, Esq.,
Sierra Club.

[See page 41 of last issue.]

Berkeley, Cal., May 18, 1909.

Editor Sierra Club Bulletin: I think there can be no doubt as to the correctness of your etymology and spelling of the word "duck" as used by our western mountaineers to designate a stone placed upon another larger stone or mass of rock to mark a trail. Murray's Dictionary, our best reliance in all such matters, under *duck* 6, gives the following: "A boy's game, called also *duckstone, duckiestone;* also one of the stones used in this game." Two citations given are as follows: "1821, Blackwood's Magazine. The duck is a small stone placed on a larger, and attempted to be hit off by the players at the distance of a few paces;" and "1888-9," Longman's Magazine. Another [game] named "ducksoff" consisted in setting on a large flat stone a round stone, . . . which from a certain distance one strove to knock off." Our "trail-blaze" on rocky ground is here so exactly described that any one who had ever played the game would almost inevitably call the thing a "duck." The volume containing the letter D was published in 1897, which fact may account for the absence of any notice of the word in the use under discussion here.

Very truly yours,
CORNELIUS B. BRADLEY.

APPEAL FOR A CRIPPLED GUIDE.

We clip the following from the New York *Evening Post.* Our esteemed fellow-member and mountaineer, Harrington Putnam, has most appropriately set forth this lamentable case of affliction that has befallen a worthy man. Any contributions may be sent to Mr. Putnam direct, or to the Secretary of the Sierra Club, and will be duly acknowledged.

To the Editor of The Evening Post:

SIR: The sympathy of mountain-climbers should be given to the Zermatt guide, Rudolf Taugwalder, who arrived in New York from Peru on Saturday. He is going homeward with the loss of his left hand (amputated at the wrist), with his right fingers more or less maimed, and having also lost most of his left foot, from the ascent of Mt. Huascaran, in Miss Peck's expedition, described in January *Harper's.*

Taugwalder is one of a noted family of Swiss guides. In 1893 he went to Ararat, making a successful ascent for Mr. H. P. Lynch, a London Alpinist, and he afterward acted for Dr. and Mrs. Bullock Workman in their first Himalayan season, but was prevented by bad weather from any high ascent.

The perils of frostbites at high Andean altitudes have been previously noted. It was largely from this apprehension that Sir Martin Conway turned back when just below the top of Mt. Sorata, in 1898, as the feet of both his guides had become frostbitten.

In Miss Peck's climb, however, the freezing occurred on the descent. It was due to the loss of Taugwalder's mitten, and the fact that he wore but one pair of stockings inside his stiff alpine boots. It was three days before he could reach the hospital at Yungay, where he stayed three months. His professional task had been successfully accomplished, having shared with the other guide, Gabriel Zumtaugwald, in a notable mountaineering achievement.

But at forty-one—nineteen years from the date of his guide's license—poor Taugwalder's professional career is thus pitiably ended. His plight calls for substantial aid from us in America, especially from the large number who have experienced the courageous help, the fidelity, and the unselfish devotion of Swiss guides. Those of Zermatt are a picked body of men, who exercise an honorable calling. To be thus crippled is a heavy blow, cutting off his future livelihood, in a career that has left him with but little resources.

Let it not be said that Americans are indifferent to this misfortune. Contributions will encourage and reward a worthy recipient, who bears his fate with fortitude. Some provision toward his hard and scanty old age should now come from our mountain-lovers.

HARRINGTON PUTNAM,
Vice-President American Alpine Club.

New York, January 11, 1909.

APPALACHIAN NATIONAL FORESTS.

After ten years of vigorous and persistent work with Congress the forces which have been behind the so-called Appalachian National Forest movement almost achieved success at the last session. Both the Senate and the House passed bills favoring this project, through which it is primarily sought to protect the headwaters of the great interstate streams which take their rise in the Southern Appalachian range and in the White Mountains of New Hampshire. From the Senate was secured a bill which provided for the purchase of the necessary lands with the aid of a direct treasury appropriation. The House passed a bill of considerably broader scope, one capable of dealing with the subject in a national rather than in a sectional manner, but not appropriating the funds from the treasury unconditionally, but as the proceeds of the existing National forests might allow. This measure did not meet with the approval of the great majority of the members from the present National-forest states, California being the only State of that group to deliver so much as a single vote for the bill. The vote of the Hon. James McLachlan of Pasadena was the only one cast in its favor by any member representing the Rockies and the Pacific Coast. Similarly the senators from those states took objection to this diversion of the forest revenues of their section for the purpose of creating National forests elsewhere. The House bill reached the upper chamber during the closing hours of the session, when time was too limited to admit of full debate. Had time admitted a complete discussion in the Senate, there is reason to believe that the House bill could have been passed through that branch as well.

To-day, therefore, the subject stands in its legal aspects just where it did at the outset of the campaign. The bill must be reintroduced in the present Congress and be argued before the committees just as before. But all these years of agitation and effort have not been thrown away. A great body of public sentiment has been built up in all parts of the country. People understand the question, and the underlying motives which actuate both the petitioners and the opponents. As a result the course of the new bill should be much easier than that of its predecessors. Whether the new bill will provide for the utilization of the receipts from the present forests, or will call for a direct treasury appropriation has not been definitely determined at this writing. It is certain, however, that it will follow the comprehensive and statesmanlike lines of the recent House bill, which was drawn by Representative Weeks, of Massachusetts, making its terms applicable to the protection of important watersheds in whatever part of the country they may be situated.

The East congratulates the Pacific Coast and the country at large upon the consummation of the long-cherished desire to save the famed Calaveras Grove from destruction. That was finally accomplished through the appropriation of unreserved public timber elsewhere, board foot for board foot. At present market prices that timber thus appropriated represents many thousands of dollars which might otherwise have been sold and converted into the National treasury. It is difficult to understand the logic which allows the appropriation of a dollar's worth of salable timber as the purchase price of what is to all intents and purposes a recreation park, and yet denies that Congress has the power to make a direct draft of legal tender from the treasury for the protection of some of the greatest economic interests in the country.

The new bill will be introduced into the House during the present extra session, that it may be ready for committee consideration during the early days of the regular sitting in December. To the East and South it is a matter of very vital consequence, and once the policy is established it is as certain to prove as creditable to the nation at large as is the present federal irrigation policy, which was once opposed by some of the very men who to-day are arrayed against the Appalachian National Forests bill.

Allen Chamberlain, Boston.

EXTRACTS FROM REPORT OF SUPERINTENDENT OF THE YOSEMITE NATIONAL PARK, 1908.

Fish.—The fish hatchery at Wawona was, as usual, operated this year by the California Fish Commission. About 300,000 fry were hatched and distributed in the waters of the park, the troops distributing about 100,000. In addition to this there were netted from some of the smaller streams, which were dry during the summer, a number of fish, which were then placed in streams that had not been previously stocked. Some of the streams and lakes which were stocked about ten years ago have now become so full of fish that it is impossible to make a cast without having half a dozen immediately rise to the flies, resulting in a double or treble catch. No better fishing ground than the mountain streams of the Yosemite National Park exists anywhere.

Patented Lands.—I can but repeat what I said in my last annual report with regard to the patented lands lying within the limits of the park, and urge even more strenuously that action be taken looking toward the acquisition by the Government of these patented lands.

Roads, Trails, and Bridges.—The condition of the roads in and about the Yosemite Valley is deplorable. The one great drawback to the visitor's pleasure is the fact that he is driven over rough roads so dusty that when he arrives at his destination his dearest friend could not recognize him. Nearly every visitor states, "I cannot see why something is not done to the roads." Many add, "We have just come from the Yellowstone, where all the roads are watered, and we understood that such was the case here; had we known it was so dreadful we never would have come." It would be useless to attempt to put in a water system by which the roads could be sprinkled until the roads themselves are properly constructed, as the entire pipe line would be destroyed in the work necessary to properly build the roads. The roads should be widened, macadamized, and watered. No macadamized road can be prevented from raveling unless it is watered occasionally, either by natural rains or artificially by sprinkling. In this climate where there is often a period of four or five months in which no rain falls, the use of sprinkling carts on the roads is absolutely essential, both to keep down the dust and to prevent the road from breaking up. The location of the main road from the terminus of the Yosemite Valley Railroad to the Sentinel Hotel is definitely fixed, and consequently the work on this road can be proceeded with when there are funds available for the purpose. The other roads should be carefully laid out with the view to having them placed in the best location for artistic effects and the general plan adopted at once before any great amount of work is put upon them. It is urgently requested that an appropriation of not less than $150,000 be secured for putting the road from El Portal to the hotels in proper condition. The visitors to the valley are entitled to this consideration, and to my mind it is of first importance.

During the past year about three miles of the worst portion of the road was so far macadamized as to be ready for the top dressing. A temporary dressing was put on, which has worked quite well, and this portion of the road is remarked upon by every person coming over it. About $17,000 was expended under two contracts with the Warren Improvement Company last year, on a percentage basis, which was found to be most satisfactory. A similar contract for aligning, straightening, and macadamizing the road on the south side of the Merced River, which will aggregate about $13,000, has been let this year to Chadwick & Sykes, and work thereon is in progress.

In addition to the fifteen miles of road extending from El Portal to the Sentinel Hotel there are about fifteen miles on the floor of the valley. These are all dusty and unpleasant to travel upon, and should receive attention as soon as the main road is repaired. Besides these roads there are four miles of road leading in the direction of Wawona, which originally lay within the state grant, and four miles leading toward Groveland, which was formerly a part of the Big Oak Flat road. Other than these all roads lying within the park are toll-roads, being the Big Oak Flat, Coulterville, and Wawona roads, which are kept in fair condition by the corporations owning them, and the Tioga road, which is not passable except for people on horseback. The owners of the latter road attempt to keep up the appearance of control over said road by sending out a wagon during the last week in August and cutting their way through the woods, sometimes on the old road-bed and sometimes off.

There are three main trails leading from the floor of the valley to the top of the rim about the valley. These trails are traveled by about 10,000 people each season and require constant care. They are in quite good condition, but it needs constant work to maintain them. The total length of these trails is about twenty-four miles. The trails throughout the park proper are in fair condition, but as very little work has been done on them since they were originally built, some need repairing. This can readily be done at small expense by employing day labor. The following trails have been constructed this season by Thomas H. Carter, working under contract, for the sum of $3,500: From Rancheria Mountain, via Bear Valley, to Kerrick Cañon; from Kerrick Cañon, via Slide Cañon, to Matterhorn, connecting with existing trails. The northern part of the park is now practically supplied with trails, except a portion leading from Lake Eleanor over toward Twin Lakes.

The following bridge improvements have been made during the past year: The Pohono bridge has been replaced, and the iron bridge near the Sentinel Hotel repaired, for $2,385 and $993, respectively, both jobs having been done under contract by the Mervy-Elwell Company; and the bridge over the Merced River above Kenneyville (upper bridge) has been repaired by day labor, the total expenditure being $939.75.

Hetch-Hetchy Valley.—The Hetch-Hetchy has been brought more prominently to the notice of visitors this year than ordinarily, with the result that a larger number of people have visited it. It is one of the most interesting features of the park and should be made easy of access by a wagon road, which could be built at a very reasonable cost. From this valley numerous side trips by easy trails are available. Lake Eleanor, Lake Vernon, Rancheria Mountain, and Till Till Valley are all within an easy day's ride and return from the valley. Tilden Lake, Pleasant Valley, and Jack Mains Cañon are within an easy day's ride, the return trip being made the following day.

Editorial Note.—Many criticisms of the Federal Government in its management of the Yosemite Valley have come to our attention. Since this Club was largely instrumental in securing the recession of the Valley and having it incorporated in the Yosemite National Park, where it logically belonged, it may not be out of place to make some comment on these criticisms. The one that is most seriously urged is that the Federal Government has not kept faith in expending large sums on improvements as it has in the Yellowstone. While it must be confessed that as large sums have not been appropriated as we had hoped and been led to believe would be the case, yet the real test is whether the Valley has been benefited to any extent by the change of control. That there is noticeable improvement is admitted by almost every one conversant with the facts. The appropriations made under State control never exceeded $15,000 per annum, and a considerable portion of this amount was used to defray expenses of administration and left little for permanent improvements. The Federal Government has appropriated annually $30,000. A far greater proportion of this money is expended in permanent improvements than under State management. For example, $17,000 was expended in 1907 on permanent road work, and a contract calling for $13,000 more was let in 1908. An engineer has been detailed to assist in this work. These are but instances of the splendid character of the work being accomplished under the new regime. We sincerely hope that Congress will materially increase the annual appropriation for the park, but, in any event, the recession of the Valley has been fully justified by the results already accomplished.

EXTRACTS FROM REPORT OF STATE ENGINEER, NOVEMBER 30, 1908.

Present State Roads.—The State roads now owned by California and under the control of this department all traverse the mountainous districts. No valley roads or macadam highways are under State supervision. To date, the policy of the State has been to construct and maintain roads through territory where construction is expensive and the counties through which they run are too poor to properly care for a road. In cases of this kind the assistance rendered by the State is proper and should be extended.

One may to-day attempt the trip of viewing the wonders of our mountains and find himself blocked by being unable to travel by road. The finest scenery of the Sierra Nevadas is inaccessible, and would, if opened by road, prove a valuable asset to the State.

Mono Lake Basin Road.—There has been appropriated a maintenance fund of $1,250 per annum for this road, but as I regret to state the road is not yet wholly completed to its western terminus, and consequently this money has been applied only to the work finished under the first contract.

When this road is completed in 1909 there should be some action taken towards the improvement of the Tioga road proper. This road extends from Crockers Station, in the Yosemite National Park, to the lake at the head of Leevining Creek Cañon, or the western terminus of the State road. The Tioga road has received little repairing, and consequently is in very poor shape for travel. Nearly its whole distance is in the bounds of the National Park, and should, therefore, be bought by the Federal Government and repaired. Unless this is done, travel by this route will be so badly handicapped as to make this beautiful country inaccessible to a great many people.

King's River Cañon Road.—The appropriation of $25,000 by the State, contingent upon the county of Fresno contributing 50 per cent as much, or $12,500, provided $37,500 for the survey, location, and construction of this most important scenic highway of the State. During the year 1906 a survey was made for the first 20.1 miles to a point near Horseshoe Bend on the South Fork of the King's River. In 1907 the survey was continued under the charge of Mr. E. B. Henderson. He crossed the river near Windy Cliffs and then kept on the north side of the river to the end of the survey near the Cedar Grove Hotel, in the floor of the King's River Cañon. A total length of 32.8 miles gives a road from the General Grant National Park to the floor of the wonderful cañon of the South Fork of the King's River.

For nearly the whole distance of this road some of the most delightful scenery of California is passed. Leaving the big trees at the General Grant National Park and skirting the west slope of the ridge a panoramic view of the San Joaquin Valley is seen. Then crossing the summit of the ridge and descending into Ten-Mile is, for the last two miles, in full view of the main King's River Cañon and Tehipite from Indian Point. Crossing Ten-Mile Creek and gradually descending until Lockwood Creek is passed, suddenly the road emerges on the crest directly overlooking the confluence of the Middle and South Forks of the King's River. Here a rough, rugged, and rocky country is traversed until past Redwood Creek, when the ground encountered is very good for the construction of a road. This continues until within one half mile of the river crossing. It is on this side of the mountain, of good road ground, that may be seen the great gorge of Windy Cliffs. Where the road switches back on a turn on the crest of a ridge, the view of a deep chasm fifteen hundred feet deep is, perhaps, unsurpassed in beauty, and at the foot of this gorge, where the road survey is along the river, is a cave of unknown dimensions. The mouth of this cave is very close to the road, about one hundred feet, and extends into the limestone of Windy Cliffs. Continuing on the north side of the river until Grizzly Creek is reached, a wild river gorge is traversed. Beyond Grizzly Creek the ground gradually flattens out into the floor of the cañon.

NIAGARA FALLS SAVED AGAIN.

Congress Recognizes Wishes of the People by Re-enacting Legislation for Preservation of the Great Cataract.

Niagara Falls has been saved again for "all the people." Congress has again exercised its rights in controlling the water of the falls and recognized the expressed desire of the American people that the great scenic wonder be guarded from the diversion of its waters for purely commercial activities.

The story of the latest effort to secure legislation in behalf of the people at large by the preservation of the falls is an unusually interesting one. Under the provisions of the Burton Law the amount of water that could be diverted from the river above the falls for the great power plants was regulated by governmental control. That bill was to expire by limitation June 30th of this year. It had been originally enacted through the efforts of the American Civic Association which had as a splendid friend in Congress Hon. Theodore E. Burton, of Cleveland, Chairman of the Committee on Rivers and Harbors. When enacted it was thought the term of three years would be a sufficient time for the completion of the long-pending treaty between the United States and Canada, which would include provisions for the control of the waters of Niagara.

Two months ago the terms of a treaty had been presented to the Senate for approval. It would have safeguarded in but a partial way the beauty of the falls, and to that extent would have afforded temporary satisfaction until specific legislation could be enacted. But during the closing weeks of Congress it became apparent that the treaty might fail of ratification by the Senate. Then arose the emergency, and again the American Civic Association, led by its President, J. Horace McFarland, demonstrated its power in securing quick and efficient results. The Rivers and Harbors bill had been reported, with no especial provisions for Niagara. Just one week prior to adjournment, Chairman Burton, who has been the constant friend of the people in the saving of Niagara, presented a House Joint Resolution extending the terms of the Burton Bill for an additional period of two years. Then came action.

The aid of every member of the American Civic Association was enlisted in the forwarding of telegrams and letters to Congressmen asking the passage of the resolution. The House gave almost immediate response in its passage two days after it had been presented. Then the shower of telegrams and letters, all directed from the general headquarters of the American Civic Association, was turned on the Senate, where it was feared the resolution might be lost in the rush of other important legislation that always occurs in the closing days of Congress. But the demand was insistent; the Senators heeded the call, received the resolution and on Tuesday, two days before adjournment, passed it under unanimous suspension of the rules. It was short, sharp work—but effective. Not only have the falls been guarded, but the efficiency of the American Civic Association has again been demonstrated.

As one of the members said, "If the American Civic Association had never achieved anything more than its grand work for the falls of Niagara, it would more than have justified its existence and maintenance. But it is doing more. Niagara is but an incident. It is making, daily, for "A Better and More Beautiful America" by inspiring in all parts of the United States and Canada positive work for the physical development of cities, towns, and villages.

HETCH-HETCHY VALLEY.

Where to Obtain Information Concerning the Effort by San Francisco to Utilize the Hetch-Hetchy Watershed.

1. *Putnam's Magazine,* May, 1909. Article entitled "Camping above the Yosemite," by Harriet Monroe, pp. 221-6. Reprinted in this issue of the Sierra Club Bulletin.

2. *The World To-day,* May, 1909. "The Hetch-Hetchy," by F. M. Fultz, pp. 524-530.

3. *World's Work,* April, 1909. Editorial and article entitled "San Francisco against the Nation."

4. *Suburban Life,* March, 1909. Article entitled "Despoiling the Hetch-Hetchy," by Wm. F. Badè, pp. 117-118.

5. *Outlook* (New York), January 30, 1909. Editorial, pp. 234-236; article entitled "Dismembering Our National Park," by R. U. Johnson, pp. 252-3.

6. *Outlook* (New York), February 13, 1909. Editorial, pp. 330-331.

7. *Outlook* (New York), November 2, 1907. Article entitled "The Tuolumne Yosemite in Danger," by John Muir, pp. 486-489.

8. *Century Magazine,* January, 1909. "The Endangered Valley," by John Muir.

9. *Independent* (New York), January 14, 1909. Editorial, "Shall the Yosemite Be Despoiled."

10. *Independent* (New York), May 14, 1908. "The Hetch-Hetchy Valley," pp. 1079-1084.

The attention of members interested in the controversy concerning the Hetch-Hetchy Valley is called to the verbatim report of the hearings before the Committees of the Senate and House of Representatives on Public Lands at Washington. There is a copy on file at the Club Library, 302 Mills Building, and others may be obtained by sending to the Superintendent of Public Documents, Washington, D. C.

SIERRA CLUB PINS.

A very attractive Sierra Club pin is on sale at the office of the Secretary. The price in silver or bronze is $1.00; and in gold, either as a pin or watch-fob, $3.50. The gold pin is only made to order. Those desiring to have a pin sent by registered mail should send to the Secretary of the Sierra Club ten cents in addition to the above-mentioned price.

SIERRA CLUB STATIONERY.

The official die of the Sierra Club is now at store of Paul Elder & Co., 239 Grant Avenue, San Francisco, who are prepared to execute orders for Club stationery.

MAPS OF THE SIERRA NEVADA MOUNTAINS.

The three maps of the Sierra Nevada Mountains, hitherto printed as ordinary blue prints, have recently been revised, and are now printed by a new process as blue lines on white paper. This greatly increases the utility of the maps, as notes and new features can be added by the traveler in pencil. These maps, as before, are three in number: No. 1, The Yosemite National Park; No. 2, The Basin of the San Joaquin River; and No. 3, The Basins of the King's, Kern, and Kaweah rivers.

The price of each of these new maps will be $1.50. The old blue-print maps will not be furnished hereafter.

J. N. LE CONTE, Berkeley, Cal.

FORESTRY NOTES.

EDITED BY PROFESSOR WILLIAM R. DUDLEY.

DISTRICT EXAMINATION OF BOUNDARIES.

Through the establishment of six district headquarters in the West, the work of the Forest Service has advanced so far that it is now possible to undertake a thorough-going examination of National forest boundaries and an inquiry into the character of any interior areas which may appear to be not suitable for National forest purposes. In a letter to the district forester in this city, Forester Pinchot says:

LETTER FROM FORESTER PINCHOT.

"Plans formulated here last winter and approved by the Secretary of Agriculture call for a systematic and complete going over of all National forest boundaries during the present field season. The work which you have been constantly doing in this direction is along the right lines, but the plan adopted calls for more concentrated effort in this work throughout the Service during the coming summer. With the field force at your command and your close knowledge of local conditions and of the National forest officers, you can so organize this effort in your district as to insure a thorough going over of your part of the 60,000 miles of National forest boundaries by competent men, whose reports as to the character of the land within and without the forests and whose recommendations as to lands which should be excluded or included, checked by the information already possessed by the Forest Service, can be relied on.

"To do this work in one summer will make severe demands on you, but it is not beyond the capacity of the Service as now organized. Please give it your best efforts until the work is completed, and bear in mind especially that the quality of the work must be unimpeachable.

"This work should all be completed by the close of the present field season, and each district forester should at that time be able to vouch for the correctness of the proposed boundaries of his forests. If, however, there are changes recommended by examiners which you feel are questionable, such cases may go over for checking until the next field season, in order that no mistakes may be made. Possible additions should be noted as carefully in the six States where congressional action is necessary to create additions to forests as elsewhere.

"As you know, the policy of the Service has always been to exclude from the boundaries of a National forest all agricultural land, except, as Congress clearly intended, areas so small that they could be handled more acceptably under the Act of June 11, 1906. We want all the land put to its best use, whatever that use may be. A good deal of time and money has been spent by the Service in this most important work. I believe, however, that there is still land which would serve the public interests best outside of National forests and which could therefore be excluded to the public advantage. I believe, too, that adjoining many of the forests are areas which, because of the value of the timber they support, their importance under a proper forest cover for watershed protection, or because the best public use of the existing forest can be brought about only through their inclusion, should be added to the National forests.

"In considering changes of boundary the character of the land and its future usefulness for forest or agricultural purposes, the protection that it may give to watersheds at the head of streams from which towns, cities, and irrigation projects draw their supply, areas which need reforestation, and areas which should be included from the standpoint of the public welfare generally, should all be carefully considered. Whenever a change of boundary is recommended the reason for it should be plainly shown. When the proper boundary of the forest does not conform to the exterior limits of the timbered areas the reason should be given plainly.

"In accordance with the usual practice, every effort should be made to learn the wishes of citizens as to what lands should be excluded or included. If areas are proposed for addition or elimination at the request of citizens, their petitions should form part of the reasons for the change in boundaries. Petitions which have contributed to the establishment of the present boundaries should, when practicable, be submitted as part of the record.

"For this work you will need to use your very best available help. The organization of the work is, of course, in your hands.

"Existing and proposed boundaries, and all land and cover classifications should always be shown on maps, supported by reports. So far as possible, the Forest Service atlas folios should be used as the base maps. The publication of these folios is being pushed forward as rapidly as possible. By the first of August nearly all of them will be in your hands. Where it is possible to get them to you at a considerably earlier date by leaving out the classification and simply sending you the blank copies this will be done.

"In addition to having every boundary line carefully gone over, I want you to consider whether you have any considerable areas of agricultural land in the interior of the forests or other land which would serve the public best by being excluded.

"This is a matter on which it will be necessary for you to put your very best effort. If there is any help that can be given by the Washington office, let me know. From the time this work first starts I want you to keep me fully informed of its progress by monthly reports."

DISTRICT OFFICES.

When the various district offices of the Forest Service were established in the West, a big step was taken toward transferring into the field the actual work of administering the National forests. The district offices have now been in operation for about six months, and the wisdom of their establishment has been demonstrated. Restricting the forests to be looked after by each district office to those where conditions are similar has enabled the officers in charge of various lines of work to secure a much fuller grasp of detail than was possible when affairs were administered from Washington, and many questions of policy must necessarily be considered from the standpoint of all the forests.

SUPERVISORS' OFFICES' JURISDICTION.

Another step is about to be taken by the Service to still further simplify the carrying on of National forest business, for it has been decided to transfer certain lines of work entirely to the supervisors, making them solely responsible for results. When this is done the district offices will have much more time for the actual supervision of work in the field, since a great deal of the routine office work which now demands their attention will be transferred to the supervisors' offices.

The lines of work thus transferred include the record of all permanent improvement work, the issuance of special-use permits not involving the execution of bonds or involving water power or other natural resources, action on claims where the applicant's good faith is shown and the land is not needed for administrative purposes. Also, all small or unadvertised timber sales will be acted upon directly by the forest supervisor and record of these sales will be kept only in the supervisor's office, to be checked up from time to time by members of the district office.

This step is not in the nature of an experiment, but is following out a policy which has been contemplated for a long time, but the execution of which has had to wait until this time because it was not deemed at first advisable to place this full responsibility upon the supervisors. The time has now come, however, when it is felt that this new move will mean increased efficiency in the transaction of National forest business. F. E. O.

BOOK REVIEWS.

EDITED BY WILLIAM FREDERIC BADÈ.

"STICKEEN."* This little story exhibits at its best the mature literary art of John Muir. It is a leaf from the large book of his experience as an explorer. Even one who has not had first-hand acquaintance with glaciers, forests, and mountains cannot read this story of adventure without a speeding pulse. The setting of the tale could scarcely have been more dramatic. A fierce storm on a great glacier of the Alaskan Fairweather Range, the "ice-cliffs towering above the shrinking forest," an exploratory excursion over the ice-falls, the barrier of an abysmal crevasse encountered at night-fall in returning, the perilous crossing by an ice-bridge—these are materials worthy of Muir's pen. The only actors in the drama are John Muir and Stickeen. The latter is a dog, named for an Alaskan tribe of Indians. Odd, independent, reserved on ordinary occasions, the presence of an awful danger suddenly brings to the surface unsuspected sagacity and emotion. "Who could have suspected the capacity of this dull, enduring little fellow for all that most stirs our mortal frame?" It is safe to say that henceforward Stickeen ranks among the immortals. The many thousands who now hail with joy the too infrequent products of John Muir's pen, will place this sketch beside the water-ouzel as one of the finest of his animal portraits. No better recommendation could be given.

W. F. B.

"WILD LIFE ON THE ROCKIES."† Enos A. Mills is a naturalist and a mountain climber who dedicates his book, "Wild Life on the Rockies," to John Muir. This book contains the record of many long rambles among the mountains, especially in winter, when the deep snow and the intense cold added a spice of danger to his experiences. He carried no firearms and no food, except a few raisins, yet he gives the story of several experiences far above the snow-line in great storms, when only constant movement and skill in traveling on snowshoes saved him from death. For three years he was the State Snow Observer in Colorado, scaling many of the highest peaks of the Rockies and making studies on the upper slopes. He devotes one chapter to a graphic story of his experiences in the wilds without firearms and he declares as the result of many trips that he is content to take the chances without the burden of weapons.

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* *Stickeen.* By JOHN MUIR. Houghton, Mifflin & Co., 1909. Narrow 12 mo. 60 cents net.

† *Wild Life on the Rockies.* By ENOS A. MILLS. Houghton, Mifflin & Co., publishers, Boston. $1.75 net.

This volume is full of incidents, capitally told. In fact, it is one of the best open-air books issued in years, because of the writer's enthusiasm and his power of making the reader share in his own pleasure in wild nature. The volume is finely illustrated from photographs.

"HAND-BOOK OF ALASKA: ITS RESOURCES, PRODUCTS, AND ATTRACTIONS."*

This important volume by Major-General A. W. Greely, United States Army, and a member of the Sierra Club, on Alaska, is the first comprehensive and altogether satisfactory book on that great and largely unknown country as it is to-day. General Greely, Chief Signal Officer, U. S. A., and former Arctic Explorer, is, by his many visits to Alaska and by his knowledge of the territory, its industries, and its people, thoroughly equipped for writing such a book, and he has produced an exhaustive, authoritative, and interesting volume. It is a complete picture of Alaska to-day in its geographical, commercial, social, and industrial and political conditions. A book invaluable to any one who is going to the territory for any purpose, and at the same time of the greatest serviceableness as a reference book.

"THE BIOTA OF THE SAN BERNARDINO MOUNTAINS."†

A valuable volume, of unusual interest to Californians, has been added to the Club's library in Joseph Grinnell's "Biota of the San Bernardino Mountains," a recent publication of the University of California. Mr. Grinnell's exhaustive study of the various forms of life in the region he describes will interest not only Southern Californians, but all those who are familiar with the birds, mammals, plants or trees of the northern Sierra, as they are in many cases identical. The author always notes the zonal distribution of the species under observation, the localities and dates of his studies, and frequently dwells at some length upon the more intimate and individual characteristics of his subjects of study. This gives the volume a peculiar value to the general reader, for whom many such passages as the description of the marauding habits of chipmunks or of the Audubon warbler harrying his young out of his home ground into pastures new will furnish suggestive hints for future observations of his own. A number of admirable plates, notably those of gopher- and rattlesnakes, give the book an added interest.

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* *Hand-Book of Alaska: Its Resources, Products, and Attractions.* By Major-General A. W. GREELY, U. S. A. Charles Scribner's Sons, 153-157 Fifth Avenue, New York. $2.00 net.

† *The Biota of the San Bernardino Mountains.* By JOSEPH GRINNELL. University of California Publications in Zoölogy.

M. R. P.

"Zeitschrift des Deutschen und Œsterreichischen Alpen-Vereins. Band XXXIX, Jahrgang 1908."

By courtesy of Herr Hans Otto Knispel we are in receipt of this volume of mountaineering records of the great Alpine clubs of Germany and Austria. It is a magnificently illustrated book, and to our German members it will be a veritable mine of delight. All mountaineers will find its pictorial presentation of mountains and alpine scenery most enjoyable. The thanks of the Sierra Club are extended to Herr Knispel and his confreres for this beautiful remembrance.

E. T. P.

"Mission Tales in the Days of the Dons."*

Under the foregoing title a collection of fanciful stories of the Spanish occupation of California have been grouped together by Mrs. A. S. C. Forbes. The typography is excellent and the illustrations well done. To those interested in that period of the State's history the book will be found entertaining.

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* *Mission Tales in the Days of the Dons.* By Mrs. A. S. C. Forbes. Published by A. C. McClurg & Co., Chicago, 1909. Large 12mo. $1.50.

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Smithsonian Institution
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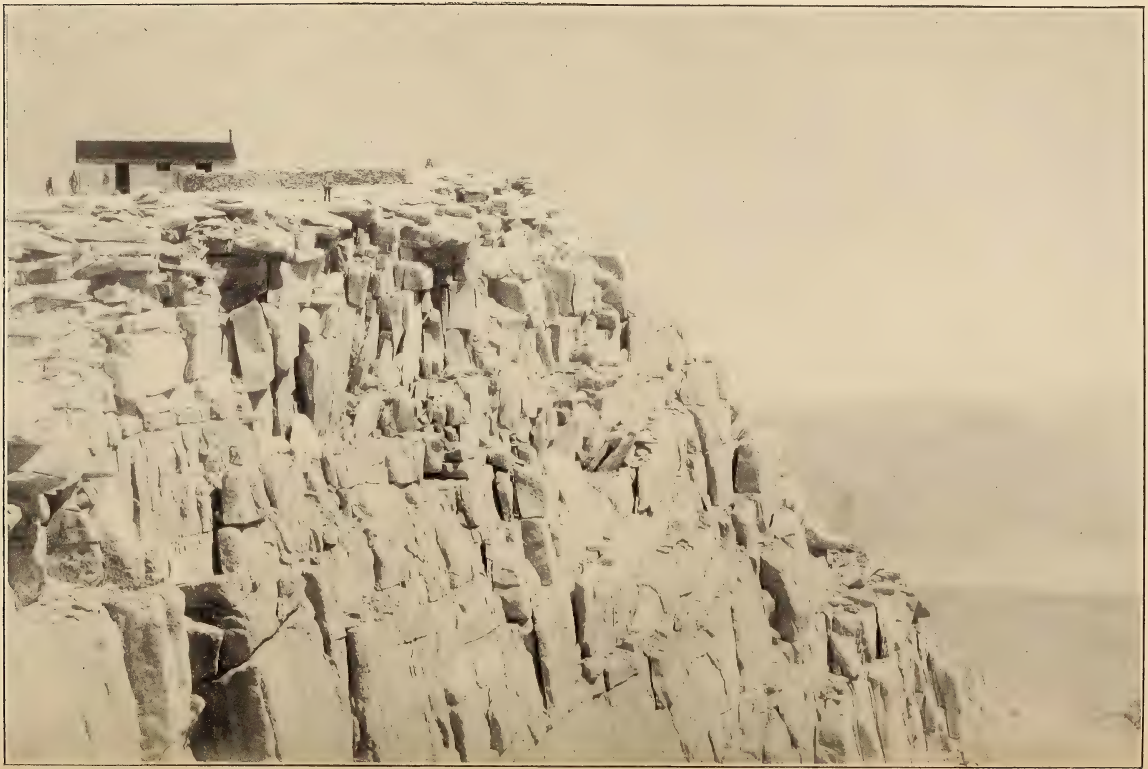
All communications intended for publication by the SIERRA CLUB, and all correspondence concerning such publication, should be addressed to the Editor, Elliott McAllister, Room 302 Mills Building, San Francisco, California.

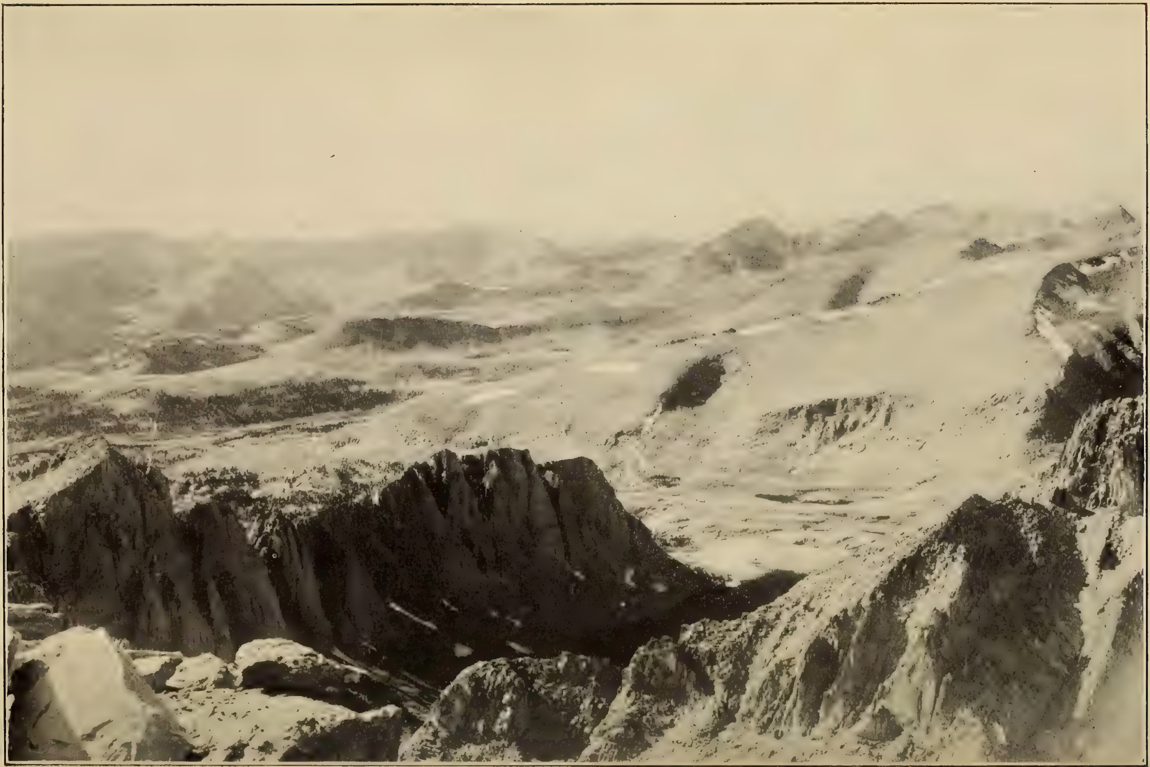
Correspondence concerning the distribution and sale of the publications of the Club with reference to advertising rates and space location, and concerning its business generally, should be addressed to the Secretary of the Sierra Club, Room 302 Mills Building, San Francisco, California.

This publication for sale at 302 Mills Building, San Francisco, and at Dawson's Book Shop, 518 South Hill Street, Los Angeles.



THE OBSERVATORY ON MOUNT WHITNEY, 14,502 FEET.

From photograph by Dr. W. W. Campbell, 1909.



LOOKING NORTHWEST FROM MOUNT WHITNEY.

From photograph by Dr. W. W. Campbell.

SIERRA CLUB BULLETIN.

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THE OBSERVATORY ON MOUNT WHITNEY*

BY ALEXANDER MCADIE.

The mention of Mount Whitney, culminating point of the Sierra and highest spot in the United States, excluding Alaska, brings before the minds of most of us a series of mental pictures connected with the discovery and general history of the peak. The mountain was first seen from Mount Brewer by members of the Geological Survey of California in 1864 and was named after the distinguished head of the Survey. It was first climbed, as far as can be ascertained, on August 18, 1873, by Lucas, Bigole, and Johnson, and ingloriously named Fisherman's Peak. Clarence King had climbed what he supposed was Whitney in 1871; but in reality the peak now known as Sheep Mountain† (shown in the photograph) lying to the south, also known as Old Mount Whitney and Mount Corcoran. While in New York on September 1, 1873, he learned of his mistake, and, hastening west, climbed the right peak, September 19, 1873. On September 6th of the same year Carl Rabe climbed the peak, carrying to the summit a mountain mercurial barometer,—Green, No. 1554,—and made the first determination of the mountain's height. This particular barometer was again carried to the summit by McAdie and Le Conte with other instruments on July 8, 1903.*

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* The use of Whitney and other peaks in the Sierra as sites for observatories was advocated in the following papers published in the SIERRA CLUB BULLETIN: "Mount Whitney as a Site for Meteorological Observatory," No. 31, Vol. V, pages 87 to 101, McAdie; "Mount Rainier, Mount Shasta, and Mount Whitney as Sites for Meteorological Observatories," No. 34, Vol. VI, pages 7-14, McAdie.

† Name changed in 1905 to Mount Langley.

In July, 1881, Professor Langley's party went into camp near what is now known as Langley's Lakes. The expedition entered the region by way of Lone Pine, crossing the divide south of the summit and camping at an elevation of approximately 12,000 feet. The importance of the observations then made has not been fully understood nor appreciated even by scientific workers. To the people at large comparatively little has been made known. In the coming years, as the various problems of solar and stellar atmospheres press for solution, a truer appreciation of Langley's high-order work in connection with the solar constant and the absorption of energy by the earth's atmosphere will be had. Not the least in his long line of honors, it seems to me, is the credit due him for farsightedness and sagacity in selecting the site, suitable for work, and the attempt to demonstrate the truth of his belief.

Of the last scientific expedition to the summit, the Campbell-Abbot party of August-September, 1909, more will be said further on in this paper; but it is of more than passing significance that from the vantage ground of Whitney should come the first authoritative knowledge of the probable amount of water vapor and oxygen in the atmosphere of our neighboring planet, Mars.

So far as the writer knows the first men to spend a night on the summit of Mount Whitney were Michaelis, Nanry and Keeler, of Professor Langley's party.† Observations of temperature and vapor pressure were made at intervals September 2d to 5th, 1881. Twenty-eight years afterwards, August 28th to September 4th, 1909, *continuous* records were obtained of pressure, humidity and temperature for the entire period by McAdie while a member of the Campbell-Abbot party.

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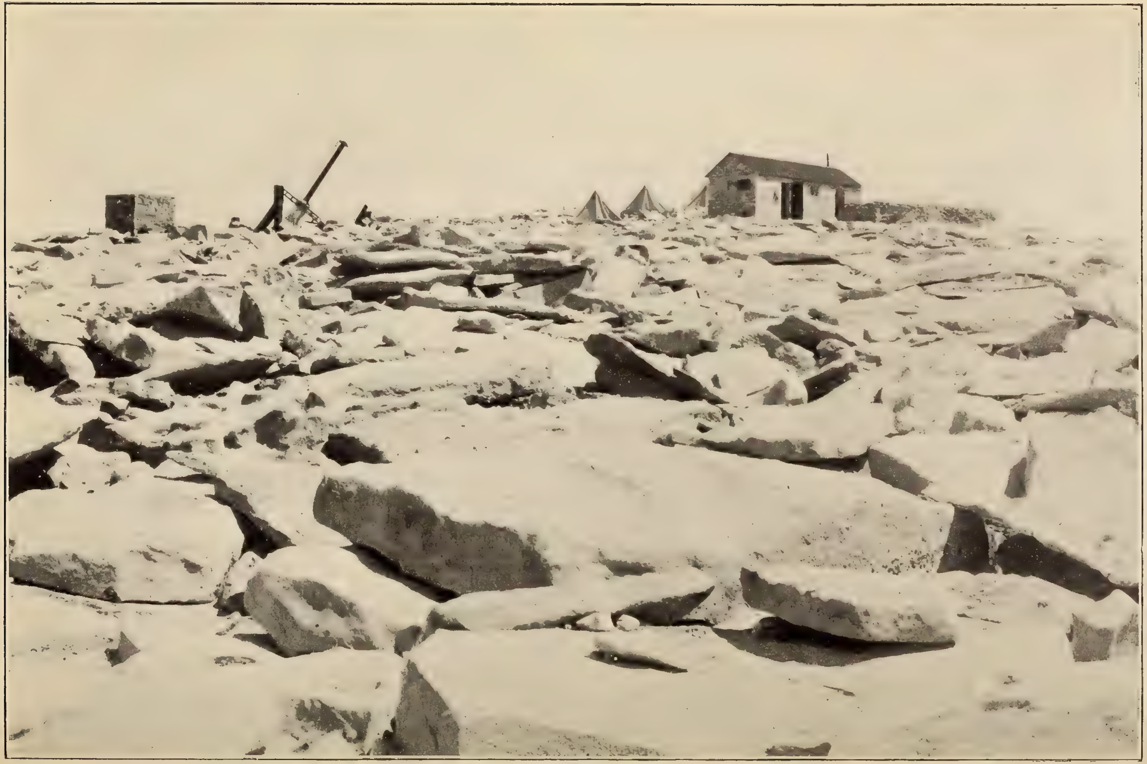
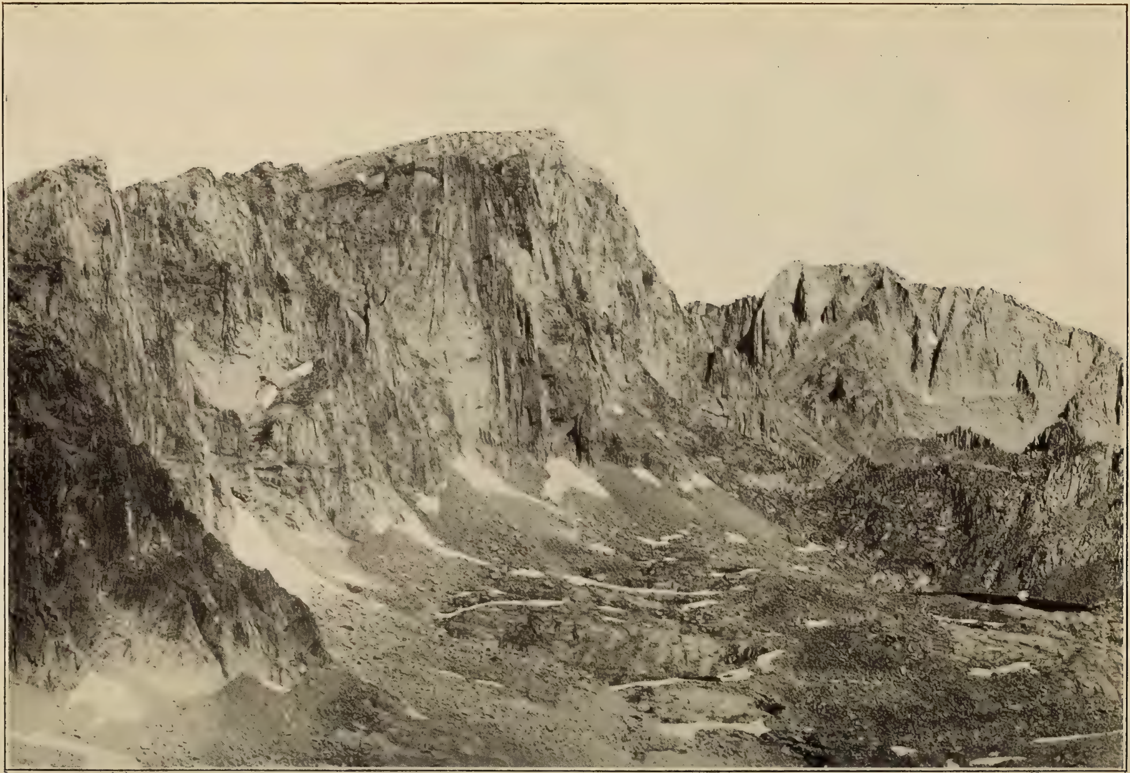
* Members of the Sierra Club will be interested to know that the height published in Sierra Club Bulletin as the outcome of this measurement (14,515 feet) was within thirteen feet of the true height, determined two years later by precise leveling methods of the United States Geological Survey.

† John Muir was among the first to climb Mount Whitney and spend a night on the summit.



THE SUMMIT OF MOUNT WHITNEY, 14,502 FEET.

From photograph by Dr. W. W. Campbell.



EASTERN FACE OF MOUNT WHITNEY FROM LONE PINE TRAIL.

From photograph by U. S. Department of Agriculture, The object of the 1909 expedition was twofold: first, to continue Langley's work and redetermine the value of the solar constant; second, to study the absorption lines due to water vapor and oxygen in the atmospheres of Mars and the Moon. The main party left Lone Pine with Mr. W. L. Skinner as guide August 23d, and camped for two nights and three days at a height of 10,300 feet. Dr. Abbot preceded the party several days. Mr. G. F. Marsh of Lone Pine had been on the summit since July 8th, superintending the erection of the observatory. Of Marsh I think I voice the sentiment of the entire party that he was a host in himself. To him more than to any other one man is due the successful completion of the trail and the building of the observatory. One instance of his devotion was deeply appreciated by all of us at the time and we are not willing now to pass it by in silence. The night before the arrival of the main party a violent thunder-storm swept the summit. The men employed in finishing the building, not without good reason, sought safety below. Marsh remained at his post with Dr. Abbot.

From the very scattered notes in my Journal, under date of August 28th, I gather:

> "Reached observatory 1:15 P. M. Abbot and Marsh opened the door. Whole party well soaked. Many peals of thunder with distant lightning; hair on mules' necks bristling. A rather near flash just as we reached the summit. Felt a sharp stinging pain in right temple. At 1:50 P. M. all present and accounted for, with four visitors from Lone Pine. Fourteen animals in our pack-train. Two of the mules, Jack and Lucky, were specially honored because they carried the mirrors safely to the top. These are flat, silver-on-glass mirrors, one about nineteen inches and the other seventeen inches in diameter. If accident had befallen these en route the party would have turned back, for there would have been no way to make spectrograms."

More than once on the way up the Director's heart was in his mouth, as some particular animal, loaded with delicate instruments, would jeopardize his burden. There was some quiet jesting between the rest of us, concerning the relative value of ourselves and our mute asinine friends. Coming down from the summit a week later one of the mules fell from the trail. We spent more than an hour trying to get him back; but had to abandon him, even after getting him back to the trail. The elevation was 13,700 feet, so recorded by our barograph, which fortunately was on the person of the writer. Two hours later, at an elevation of about 13,000 feet, in crossing one of the snow fields, four mules and a saddle horse, loaded with mirrors, photographic material, hygrograph and thermograph, lost their footing and glissaded the snow fields. It seemed as if the animals must surely be killed and the packs smashed to kindling; but fortunately there were no projecting rocks and the injuries were mostly flesh wounds. Owing to good packing and careful wrapping, the damage was not of much consequence. And we could not repress a certain feeling of exultation that it happened when we were coming down rather than when ascending.

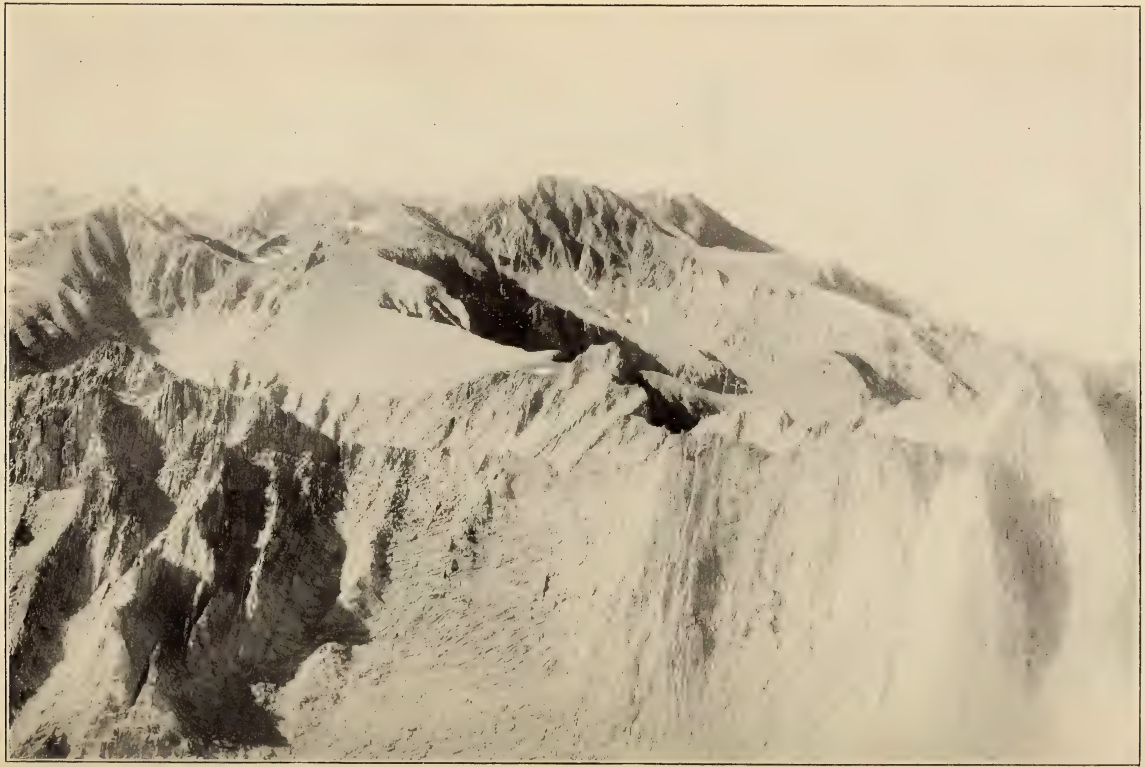
Much has appeared in public prints recently concerning the possibility of life on the planet Mars. Some spectrograms of Mars and the Moon obtained at the Lowell Observatory, near Flagstaff, Arizona, in the winter of 1908, led to the conclusion that there was water vapor present in the atmosphere of Mars. It should, however, be pointed out that these spectrograms were made in January and February, and that so far as can be ascertained in the absence of instrumental records at the place of observation, the air columns contained much water vapor and that there is therefore a valid objection to accepting these, inasmuch as the intensification of the band may be simply due to the presence of the vapor in our own atmosphere. It also appears that the photographs of the planet were made soon after dark, while those of the Moon were taken several hours later and at a drier period of the night. The special purpose of Dr. Campbell's work therefore was to get spectrograms of Mars and the Moon under the most favorable condition: i. e., when there was a minimum amount of water vapor in the Earth's atmosphere. Mount Whitney seemed to offer an ideal exposure. Here, if anywhere the spectra would be least influenced by the water vapor and oxygen in our own atmosphere. As far back as 1894, when examining the spectrum of Mars at Mount Hamilton for evidence of water vapor, Campbell had realized the need of repeating the work from some level above the water vapor strata. Mount Whitney, altitude 4420 meters (14,502 feet) above sea level, in a region of extreme dryness and accessible at the time, appealed to him as the best suited place. Therefore, when the planet was again near the Earth and high above the horizon, he planned to attempt spectroscopic work from the summit of Whitney. Mr. William H. Crocker generously defrayed the expenses of the party. To make sure of the availability of the site, Campbell and Abbot made a preliminary trip in 1908, and remained one night on the summit, August 24th. As a result of their report Dr. Walcott, Secretary of the Smithsonian Institution, authorized the building of a small observatory and shelter from the Hodgkin's fund. May we not hope that this is the nucleus of a great æro-physical observatory where work shall be done that will both add luster to American science and justify in fullest measure the aim of the Smithsonian Institution in its purpose to diffuse knowledge throughout the world for the welfare of men.

Of the results of the expedition it may be said very briefly that while weather conditions were in the main stormy, there were two excellent nights for the astronomers, with an amount of vapor in the air, only a very small fraction of that present during all previous observations. Six excellent spectrograms of Mars and the Moon were obtained, and Dr. Campbell draws the conclusion on this evidence that while there may be water vapor in Mars, it is exceedingly small in amount. It is indeed doubtful if there is much difference between Mars and the Moon, so far as water vapor and oxygen are concerned. For the observations in detail and an exhaustive discussion of the question, the reader is referred to Lick Observatory Bulletin No. 169, by Dr. W. W. Campbell.

With regard to the weather records obtained, we must hurry over the record, which may some time be published in full elsewhere. The weather was clear from July 8th until August 18th, when there was a thunder-storm with four inches of snow. On August 19th there was another thunder-storm with three inches of snow. Fair weather followed until August 26th, when severe thunder-storms occurred. On August 28th there were hailstorms, snow-storms, thunder-storms at intervals. During every night of our stay, freezing temperatures occurred and on five consecutive nights the temperature fell to 26° F., or even lower. The mid-day temperatures were about 50° F.

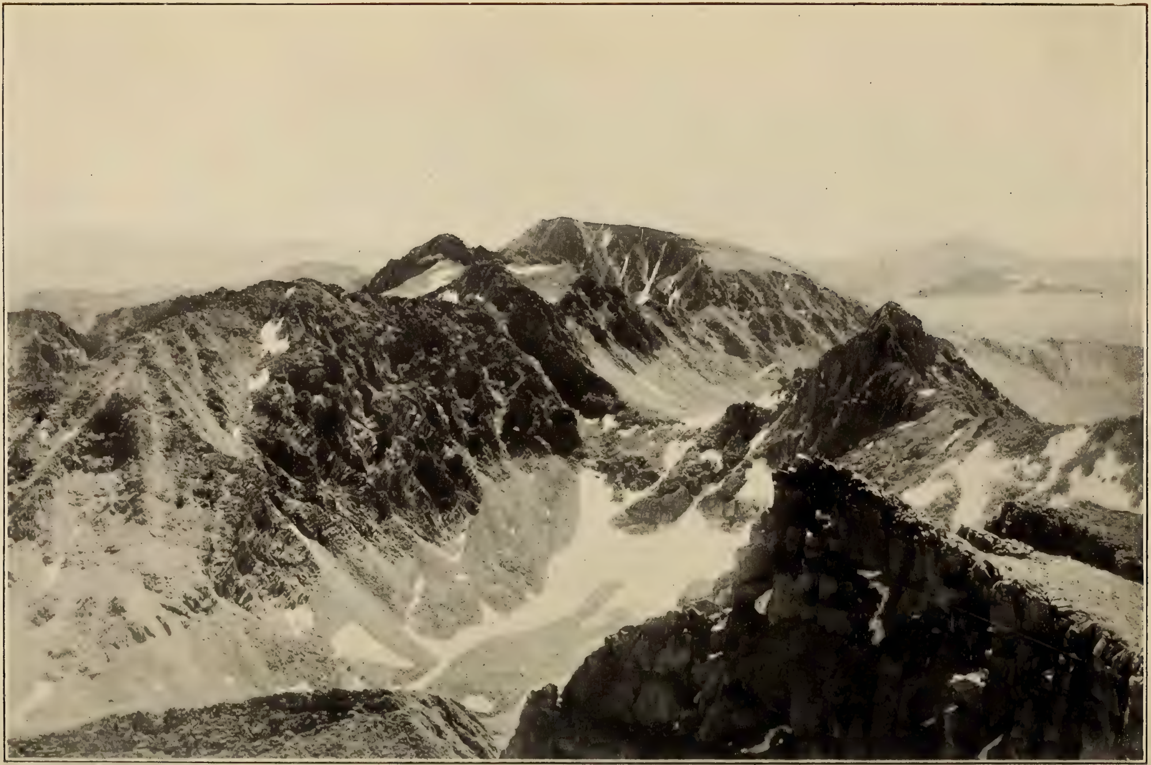
We had no instruments for recording the direction and velocity of air movement. One of the most interesting meteorological features of the mountain and indeed of the whole section, is the prevalence of uprising currents. Ultimately we hope there will be proper instrumental means for detecting and recording the flow and counterflow of the air over the peak. There were also marked changes in short intervals in the amount of water vapor present. Our humidity records, which were continuous throughout the week and which we believe to be the first records of such character ever made at an elevation exceeding 10,000 feet, show variations in humidity ranging from 5 per cent to 98 per cent. During mid-day hours the humidity would rise as a rule to above 80 per cent, while between 2 A. M. and 5 A. M. extremely low humidities were recorded, ranging from 3 to 11 per cent.

One other feature remains to be mentioned; that is the electrification of the air. There must have been tremendous potential differences between the cloud masses and the boulders on top of the mountain. But this is only one of many lines of research which ought to be undertaken on the summit of Whitney.



LOOKING NORTH FROM MOUNT WHITNEY, SHOWING MOUNT WILLIAMSON.

From photograph by Dr. W. W. Campbell.



OLD MOUNT WHITNEY (SHEEP MOUNTAIN)—THE LITTLE MOUNTAIN IS MOUNT McADIE.

From photograph by Dr. W. W. Campbell.

We are under obligations to Dr. Campbell for his unfailing courtesy throughout and his permission to use various photographs; also to the Director of the Smithsonian Institution, Dr. Walcott, for permission to use data and illustrations prepared by Dr. Abbot.

* * * * * * * *

But there is a side to the story of Whitney other than the purely scientific; and Sierrans, ever lovers of the beautiful, hold dear some memory pictures of men and hours associated with the not unkindly peak. In one of these, two agile mountaineers are toiling in the deep snow, battling hard to gain the summit. Theirs was the first attempt to climb Whitney in winter. For the sake of the adventure and also for the purpose of leaving instruments at the summit whereby a record of minimum temperatures might be obtained, these two risked life and limb. Thus is knowledge gained that wisdom may follow and the welfare of men be promoted. The story of the adventure is graphically told in the journal notes of one of the party.* From March 2d to March 10th, 1905, these two Sierrans were out on the mountain side. We see them in fancy as they stand on the ledge at an elevation of over 13,000 feet, where one mis-step on the treacherous snow would send them over the precipice. Baffled when the prize was within reach, they turn backward facing the far-sweeping snowfields in which they had slept and over which they had plodded day and night.

In the second of these memory pictures there moves a solitary figure, strolling leisurely near the summit as the summer night falls. Neither night nor fear daunt him. Self-reliant and indifferent to what may befall so far from human help, he wanders where his fancy leads, free as the air around him. Unlike the rest of us, he courts not the comforting support of comradeship and takes the unbroken way through pass and over crag. His love of the mountains and that tenderness for Nature, pure and undefiled, came from Highland forebears. A roamer in many lands, his wistful eyes have searched the hidden places of glade and crevasse in regions unexplored. He has wandered farther and seen more than the men of his generation; but his heart turns ever homeward to the "Mountains of the Light." There fittingly the picture leaves him. In the sombre gloom of the depths around him (for Whitney's sides are steep and sheer), in the deepening shadows, in the sweep of the wind, he finds friendship; communing with old friends, while night with a thousand eyes of splendor watches over all.

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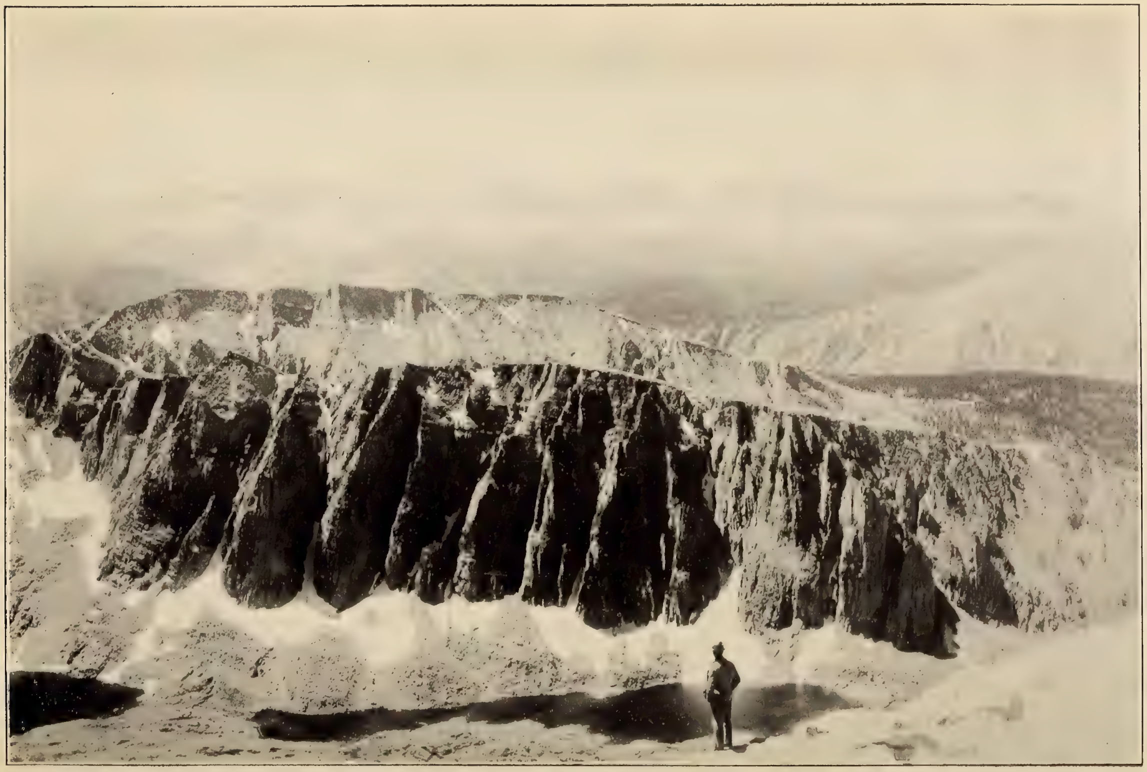
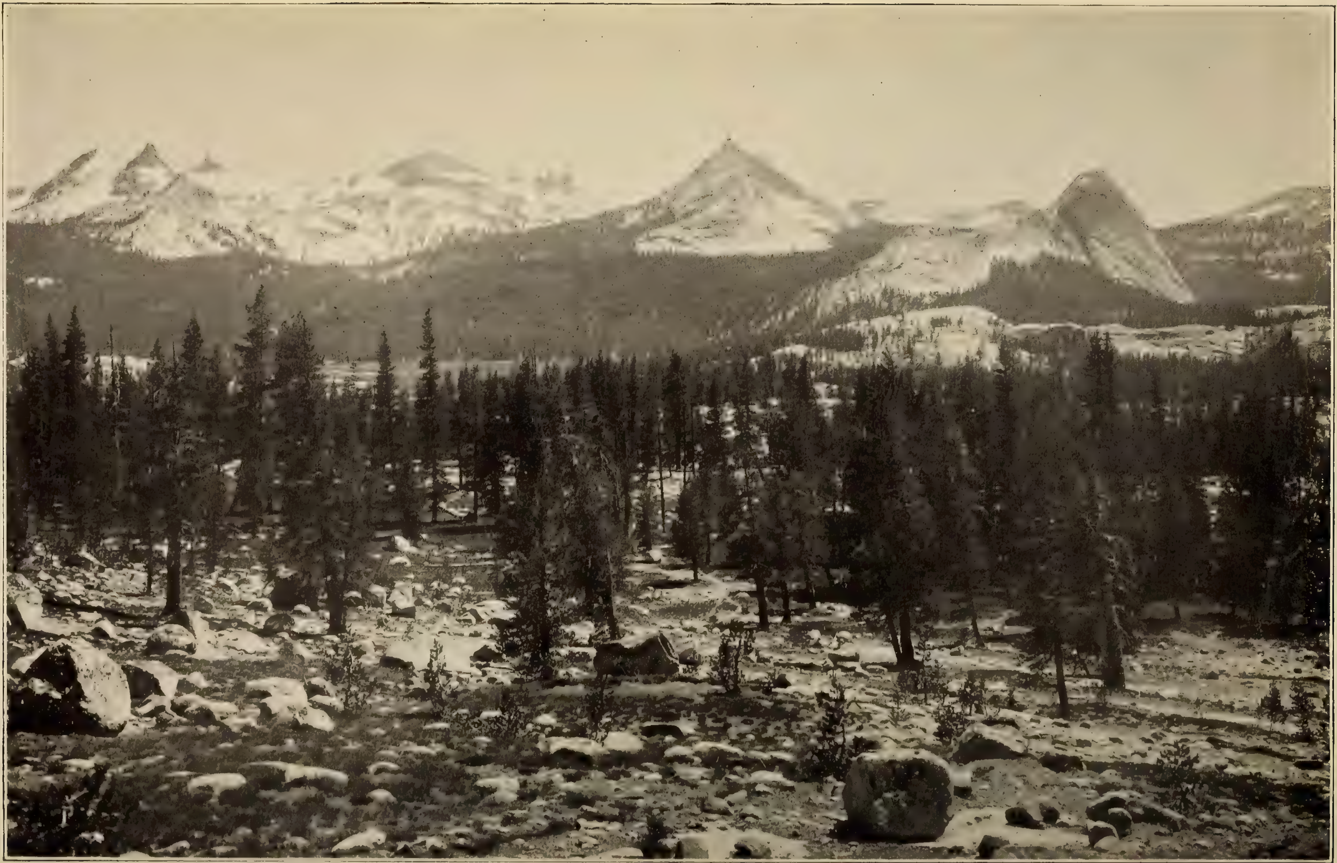
* Sierra Club Bulletin, June, 1909, (Church and Marsh).



LOOKING SOUTHWEST FROM MOUNT WHITNEY.

From photograph by Dr. W. W. Campbell.


Unicorn Peak
Cathedral Peak
Fairview Dome

LOOKING ACROSS THE LOWER END OF TUOLUMNE MEADOWS, ONE OF THE FINEST CAMP-GROUNDS IN THE WORLD.

From photograph by Herbert W. Gleason, 1909.

THE GRAND CIRCUIT OF THE YOSEMITE NATIONAL PARK

By Lucy Washburn.

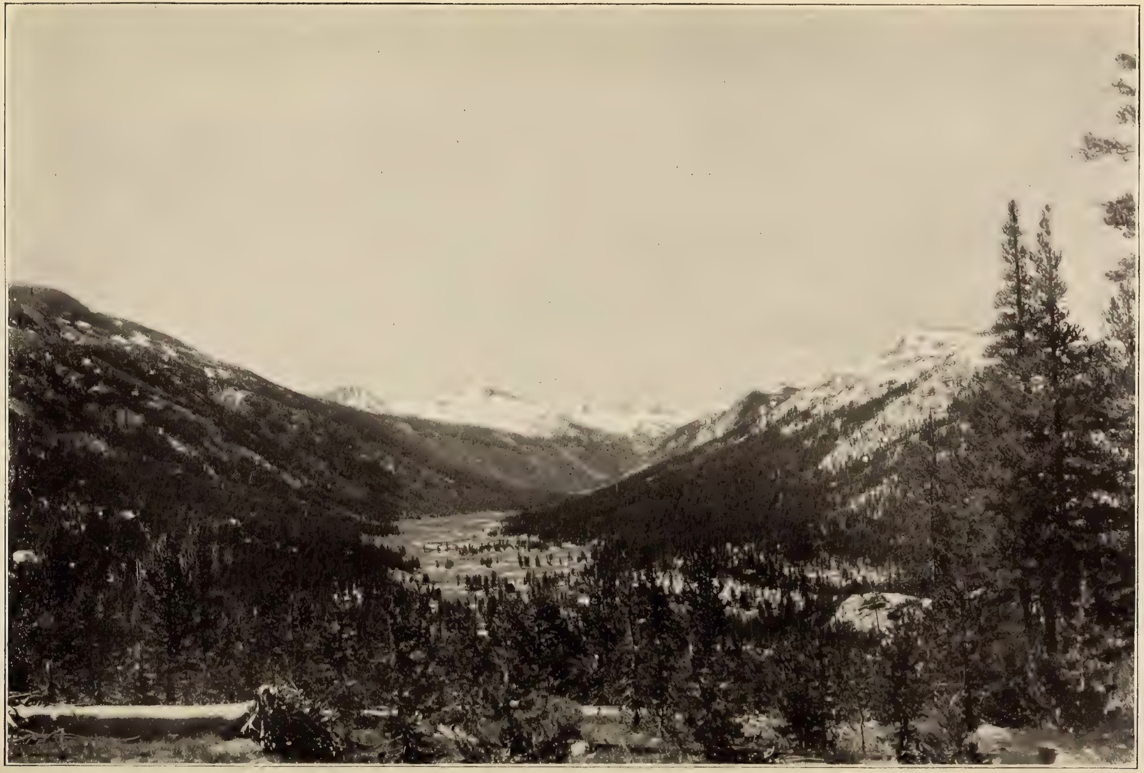
As the American people know little of the value of one of their greatest national parks, those persons who have had the privilege of visiting it owe their fellow-citizens such report as they can give. The want of roads has hitherto kept out the general public, but the Sierra Club of mountain lovers waits not for roads and wagons. With food, minimum clothing, and light down "sleeping-bags," carried on pack animals, the Sierrans tramp freely up and down the mountain trails from camp to camp.

Behold us, then, filing up out of Yosemite Valley past the famous Vernal and Nevada Falls to the upper cañon of Yosemite's river, the Merced, and two or three days later crossing at an altitude of 10,500 feet the pass from the basin of the Merced to that of the Tuolumne. These two parallel river basins and their accompanying heights make up the Yosemite National Park. When our Government shall have built a road over this pass, as is perfectly feasible, and some hostelry shall perch among its beetling snowy crags, the thousands who now see only the Yosemite Valley below it will never fail to see this wild Alpine glory.

Making our way down the northern slope, the grand upper basin of the Tuolumne River was spread before us, many square miles in extent—the bed of an enormous glacier of old, now taken possession of by a wide forest, thinning as it climbs the granite slopes to bare rock and snow. Before sunset we were camped beside the river in the "Tuolumne Meadows," finest of all Sierra camping-grounds, says John Muir, who knows the Sierras best. Here the uniting branches of the glacier had furrowed widest, and succeeding ages of deposit have produced a level floor, over eight thousand feet above the sea. The meadow, about the size of Yosemite Valley floor, is not a gorge with precipitous walls, but an open smiling expanse, surrounded by noble mountains, their snowy summits reposing against the clear blue. We look right up to the main crest of the Sierra, the lowest pass in the tremendous line 10,600 feet high, dominated by peak after peak from twelve thousand to over thirteen thousand feet in height. Shutting in the sides of the valley are lesser peaks, snow-tipped, of a striking variety of sculpture, as indicated by their names—Cathedral Peak, Fairview Dome, Unicorn Peak. Through the grove-bordered meadow of soft grasses and flowers winds the noble Tuolumne River, its clear water brimming to the brink, here in smooth full flow, there in dashing rapids. And in the center of all stands forth "Lambert's Dome," a towering granite pyramid. It has one accessible side, by which you climb to the summit, where you sit hour after hour, entranced by the view of this tremendous amphitheater.

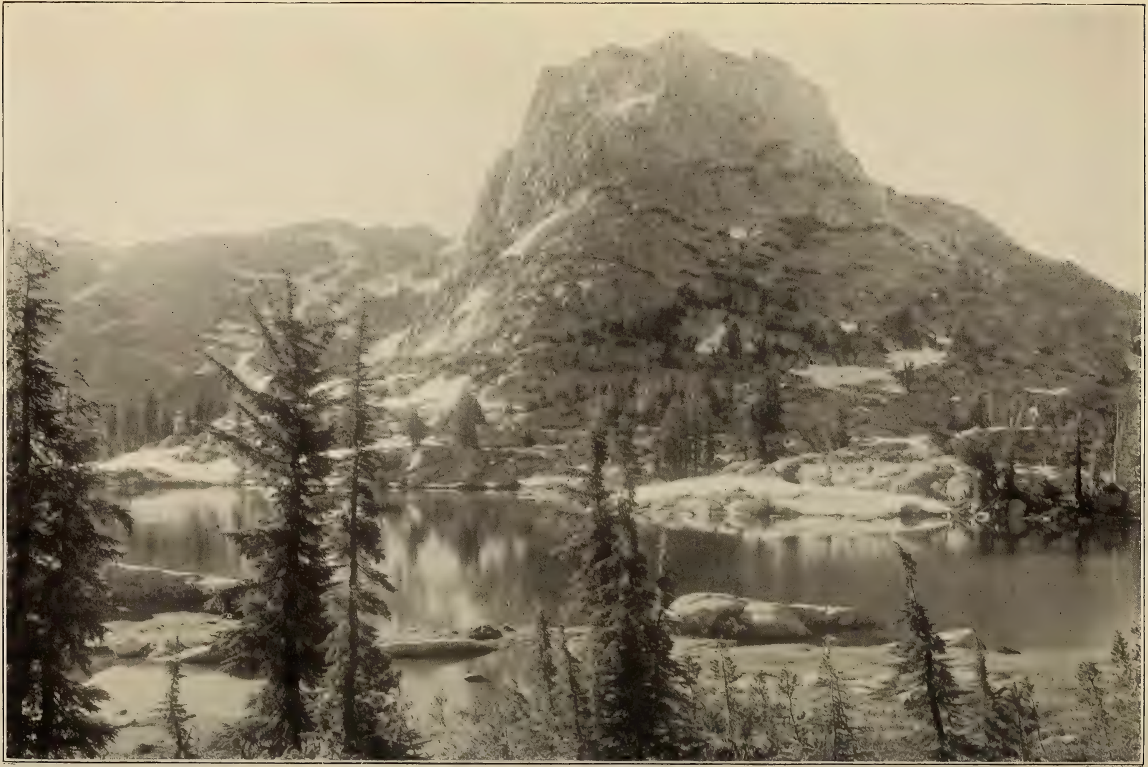
Here was our glorious home for a week. The majority of the party made, from this center, the ascent of either Mt. Dana or Mt. Lyell, each requiring a two-days' trip and a hard climb, more than recompensed by views over California and Nevada from these summits of the range. For those who chose the meadow and nearer excursions, the days were all too short. And what nights in this pure upper air! How searching the stars as from our beds on the ground we looked up into the infinite! What a new divine restfulness after this revelation of the everlasting arms around us!

Forty of the strongest and most adventurous of our party, their beds and five days' provisions strapped to their backs, made their way to the Hetch Hetchy down the narrow gorge of the Tuolumne, deep as the Colorado Cañon and slippery with glacier polish. The rest of us were well content to swing around by the trail at several miles' distance from the river. It led us over one divide after another, down into and across the deep valleys of the streams flowing into the Tuolumne. The second



LOOKING UP THE LYELL FORK OF THE TUOLUMNE MEADOWS, YOSEMITE NATIONAL PARK.

From photograph by W. L. Huber, 1909.



ROGERS LAKE AND REGULATION PEAK, YOSEMITE NATIONAL PARK.

From photograph by Geo. R. King, 1909.

afternoon from the meadows we held our breath when our trail led to the brink of the great Matterhorn Cañon, cut for miles deeper and deeper from the sharp peak fitly named for the famous spire of the Alps. Down the steep cañon sides we picked our way to the night's camp beside the stream, only to climb the opposite wall next day. Winding around this ridge, suddenly we came on a point where the whole vast slope of the Sierra range was in view, from its snowy crest down the bewildering miles of ridges and cañons to the blue haze filling the great central plain of California like a sea.

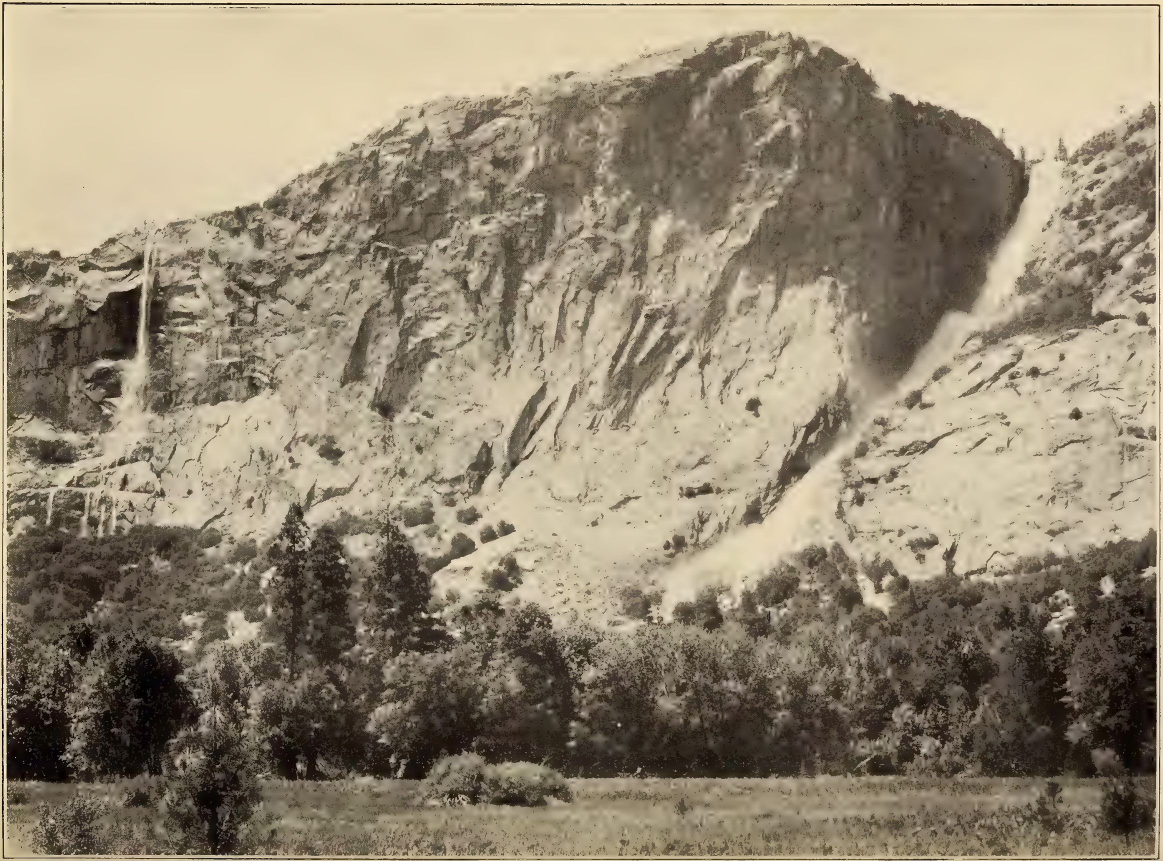
As that great day drew toward its close, we descended another precipitous trail and our eyes filled with a new picture. The loveliest of glacier lakes lay before us. On one side rose a vast rock, a thousand feet high, shaped like a battlemented castle guarding this mountain fastness, snow in every crevice of its granite wall not too steep to hold it, and snowfields under its shading walls sloping to the crystal lake. On the other, the sunny side, among the sheets of glacier-polished rock that tripped our feet, noble trees had found a foot-hold and delicate flowers grew to the very brink. As the sunset tints flooded sky and lake and touched the snowy granite cliff with the rosy tender alpine-glow, all tongues were hushed, all hearts thrilled with the heavenly scene. Then came the stars, which from our pillows among the hollows of the rocks we watched making long trails of splendor in the wonderful, quivering mirror of crystal water. Fain would we have lingered in this abode of the spirit, but we could only wake with the dawn, not to miss the sunrise that again flushed its pure cold gray and white and crystal into living loveliness, like Pygmalion's statue receiving its soul.

That day's travel brought us to another deep tributary cañon, from whose brow we saw the mighty sweep of the great Tuolumne Cañon itself, deep in whose hidden gorge we knew that the most adventurous of our party were working their strenuous way.

These overwhelming views might have weighed upon us but for the daily and nightly companionship of the friendly trees of the Sierra forest, pronounced by the two best judges—the renowned and world-experienced botanists, Asa Gray and Sir Joseph Hooker—to be the finest coniferous forest in the world, both as to the grandeur of individual trees and the variety of species. What a joy to become better acquainted with them, each on its chosen level—the delicate hemlock, the rugged juniper, the plumy Douglas spruce, the vivid incense cedar, the silver firs, red and white, so exquisite in youth, so majestic in age, and all the family of pines, among them the democratic tamarack, the massive columnar ponderosa, the towering sugar-pine, most impressive of all in its masterful individuality—until at last the Sequoia rose on our sight, ruling over the whole lordly forest in serene majesty.

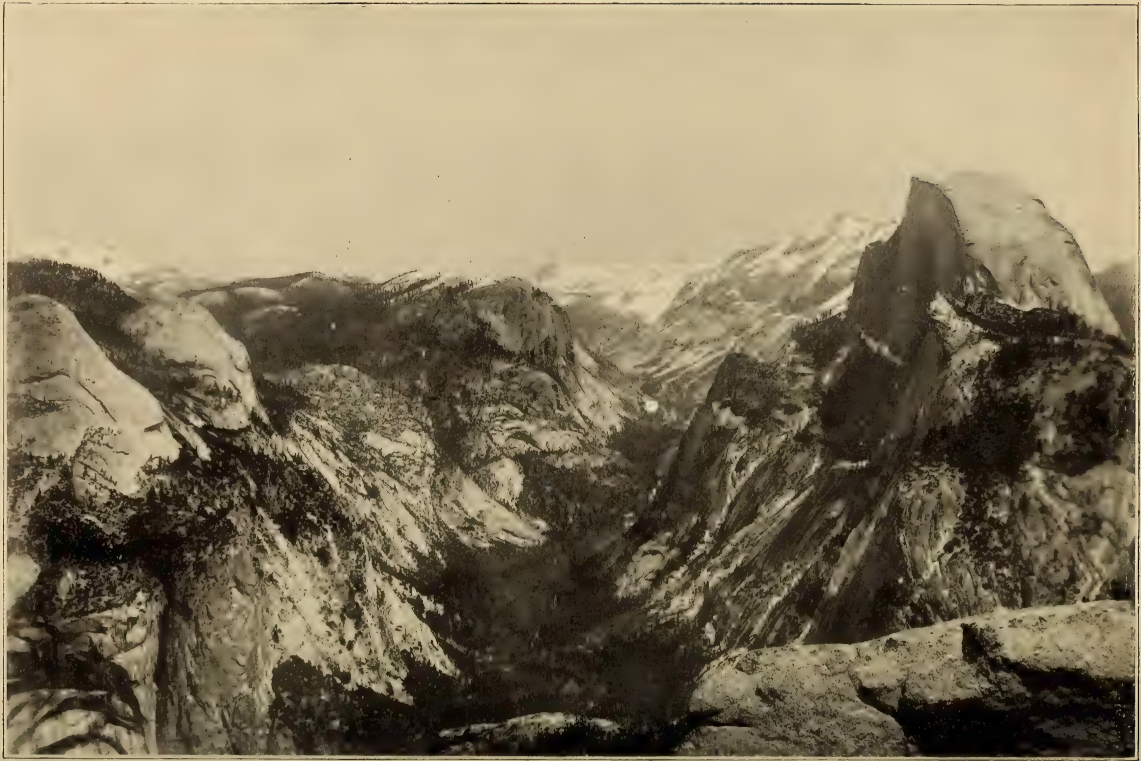
But before we came to the Sequoia we had had our second long camp in the Hetch Hetchy Valley. Vivid in my mind is my first view as I looked down into it from its upper end,—the granite walls on each side rising to a height of two thousand feet, the bold cliff "Kolana" standing forth toward the center dominating all, the park-like floor, diversified with meadow and grove, the beautiful Tuolumne River flowing through as the Merced flows through Yosemite Valley. Once in the valley, past a charming five-sprayed waterfall of the stream that opened a way for us, we looked up to see Wapama Fall in its pure white clinging to the north wall for sixteen hundred feet, reminding us of the Yosemite in situation and volume, though not flung free like that peerless fall of all the world. Beside the Wapama Fall, over that same wall, in early summer a thousand-foot single leap is made by the delicate Tueeulala Fall, fairer even than the Yosemite Bridal Veil. Grand and beautiful by day, imagine the spell of this grand cañon valley by moonlight!

With the perfectly feasible roads that our Government should build in this National park, as it has in the Yellowstone, uncounted multitudes to come will make the grand circuit of the whole.


Tueeulala Fall
Hetch Hetchy El Capitan
Wapama Fall

HETCH HETCHY VALLEY, YOSEMITE NATIONAL PARK.

From photograph by Herbert W. Gleason.



LOOKING UP TENAYA CAÑON FROM GLACIER POINT, YOSEMITE VALLEY.

From photograph by J. N. Le Conte.

DOWN TENAYA CAÑON

By S. L. Foster.

When vacation time came around this year the call of the Sierras led the writer off for another trip among their charms and delights. This time the trail went up from Yosemite Valley through the forests, the snow plants, the Mariposa tulips, and the little Alpine lilies of Indian Cañon, through the mountain gardens and lingering snows of Snow Flat, May Lake and the flanks of Mount Hoffman to the top of this peak near the center of the great Yosemite National Park and overlooking almost the whole of it, returning to the valley down the Tenaya Cañon via Tenaya Lake.

In response to a preliminary letter of inquiry a Yosemite Valley guide stated that there was a "straight, impassable wall a thousand or fifteen hundred feet high" in Tenaya Cañon. He also reported trout in the creek. The first bit of information was optimistically discounted and the second gladly received. A search through the files of the Sierra Club Bulletin revealed an article published in February, 1901, entitled "The Descent of the Tenaya Cañon," by George Gibbs.

This article states that Mr. Muir is reported to have made this trip and that Mr. Galen Clark, the Guardian of the Valley in 1894, reported it made by two other men. When the author reached Yosemite Valley at the beginning of the trip he gained little information about Tenaya Cañon, except that three men with one hundred and fifty feet of rope had made the trip down some years ago and that two Indians had started to make the trip up. From these facts it was decided that the trip was feasible and safe. Ten men had made the trip, and no fatalities had been reported. Further, it seemed clear that there must be a practicable trail down the cañon, as the deer and bears come down and they do not carry ropes.

The 1901 article spoke of three chief obstacles: (1) A "frightfully steep" precipice (the 1500-foot straight wall of the guide), where the men spent three hard hours descending the vertical wall of the gorge with the indispensable help of their fifty feet of rope. (2) "The Final Jumping-off Place," where, at an otherwise absolutely hopeless defile in the cañon, after much search they found a narrow ledge passage at the beginning with an overhanging granite shelf a few feet above, obliging them to go on hands and knees along the face of the gorge far above the hungry rocks of the stream bed, and tapering finally to half the width of a shoe and forty feet long in the almost sheer vertical wall of the chasm. (3) A seventy-foot fall that they only passed by jumping into the limbs of a tall nearby pine tree, and after swinging in the air fifty feet from the ground, climbing hand over hand up the limb to the trunk of the tree and thence to the ground. These extremely interesting problems naturally were always in the mind of the present encumbered adventurer until disposed of.

From Lake Tenaya, but four miles in an air line northeast of Yosemite Valley and nestling prettily at 8141 feet elevation in an old glacial basin between Mount Hoffman and Cathedral Peak, on the old Tioga Road toward Tuolumne Meadows, the progress along the bank of the creek is a delightful stroll on a balmy California summer day. In August there is not much water in the stream, and one crosses from side to side on the stepping stones or the tree-trunk bridges, as fancy or conditions dictate. There is practically no underbrush, tall, two-leaf pines alternating with open flowery meadows, where I saw crimson and purple and pink and white castilleias all in the same field, the crimson ones differing from the others apparently only in the shape of the tops of the colored floral bracts, being incised with two notches in the crimson or larger flower, but without notching in the other colored smaller blossoms.

As I wandered along here I stumbled upon a great, gray coyote taking his sun bath as naturally as one of our domestic dogs would. He was so startled at sight of my strange figure that he bolted across the creek in his first haste, sadly bedraggling his long, plumy tail. I came to a dead stop, and when he reached the opposite bank, thirty feet away, he also halted and gave me an amusing and almost human look of mingled curiosity and reproach before he buried himself in the forest. In my quiet advance I chanced on many interesting bits of tranquil mountain quail domestic life and found fresh deer tracks all about me.

Two forty-foot pine trees lying flat on the ground in a meadow, with roots torn from their soil-beds and with many needles still fresh and green, attracted my curiosity. The great boulder standing in front of each and the 500-foot smooth granite toboggan from the top of the nearby dome told the story of a giant game of bowling last winter. In another meadow I found the top of a tamarack pine twenty-seven feet long and six inches in diameter at the broken end. An examination of all the trees in sight in the neighborhood failed to reveal one without a top, and, as most of the needles were still green on this fragment, I inferred that a terrific gale had occurred recently and had wrenched this tree-top off and whirled it through the air a long distance to this open meadow.

About an hour's pleasant walk with the majestic, bare granite domes on every side will take one to the end of Tenaya Lake valley and to the river's notch in the rim of a vast bare-walled glacial amphitheater about a mile long, half a mile wide, from fifteen hundred to two thousand feet high and shaped like an enormous porcelain bath-tub with the end removed where the faucets usually are. The creek would make a Silver Apron here if there was enough water for the purpose, and the surface passed over was rough enough to produce the foamy, boisterous effect. As the surface has the glacial plus the aqueous polish, the water merely runs rapidly down the glassy surface for about three hundred feet at an angle that makes caution necessary for the footman in walking beside or in sight of it.

Buried alone in this amphitheater, which I called Glacial Valley, where Nature is bravely striving to cover up the wonderful polished glacial pavements and bare granite slopes and to prepare a pleasanter abode for man and beast, aside from furnishing a means of holding the water a little longer than it is held now, I spent three happy days like Sinbad the Sailor in the Valley of Diamonds. I enjoyed the experiences immensely, admiring the lofty, impressive domes and great pine trees on all sides; hunting for trout, for leaves of the white violet and sorrel for salads, for berries, for flowers, for butterflies; revelling in the balmy sunshine, boying about generally, and incidentally though not intentionally finding mental rest and health. I saw several unusually beautiful blue butterflies, but was not able to catch any.

On the night that I arrived—August 10th, the date of the Laurentian shower of shooting stars from the constellation of Perseus—I was counting those brilliant celestial performers on their annual visit as I lay in my down sleeping-bag on my flood-sand bed in a little grove of quaking aspens and chinquapins at the lower, more open end of the valley. I had reached twenty-five in my count, one a magnificent exploding meteor or bolis which lit up the heavens like a great bursting sky rocket and left an incandescent wake or trail in the sky that persisted for three or four seconds, when I heard in the darkness crashes like artillery from the granite bluffs across the creek from my camp site. I remembered of reading in one of Mr. Muir's books of some such phenomena and knew that this unusual, startling noise in the night was caused by the fall of a mass of granite detached from the cliffs two thousand feet or more above the final resting place of the fragments. As these huge blocks slid, bounded, crashed down the slopes, gaining in momentum every instant, the startling detonations sounded like nothing so much as nearby field artillery at a sham battle, followed by a rattle as of pistol shots. I stood up interestedly and strained my eyes for sparks in the direction of the uproar from this invisible conflict, but could see nothing. I had noticed as I strolled along the banks of the stream that the boulders looked strangely bruised as if a giant blacksmith with a hundred-pound sledge-hammer had struck them, not a million years ago or one year ago, but an hour ago. The granite might be elsewhere almost red from exposure to the weather, while the bruised place, always facing the crumbling cliffs, was as fresh and white as if a stone mason had just finished dressing off the discoloration. After my night's entertainment I guessed the cause. I found these disquieting evidences of rock avalanches all along the cañon on the west side.

At the end of Glacial Valley the stream made on August 15th a steep Silver Apron about six hundred feet high. In early spring, with bankful stream, this probably could be called a "thousand-foot waterfall," the convexity of the rocky surface being masked by the bounding water and spray. With the help of their rope the young men of 1894 evidently went down the almost perpendicular wall of the gorge on the west side of this fall. I reconnoitered the situation here carefully and thought I preferred a route on the less precipitous east side. The following day I successfully went over this new route of mine without a rope, one thousand feet down, and then tried to climb the thousand feet up the steeper rope route, but after reaching the level of the brink of the fall had to give up on account of a nearly vertical, impassable granite surface of twenty feet. I descended a little and made my way up through the great talus blocks and brush in a side gorge and thence over the west spur at the portal of the valley back to my camp. There are thus three feasible ways of descending this the first great obstacle.

The way that I prefer and used finally went up over a mass of compacted snow about five hundred feet wide by six hundred feet long, on the east side of the valley, to a fifty-foot lone monticola pine; thence through a broad, desolate field of dazzling white talus blocks and a patch of tall brush to a point well down the cañon and directly above where the vegetation creeping up from below has nearly met the growth reaching down from above; thence zigzagging down along the crevices in the rock to the brush below. By stopping on the way at an isolated, conspicuous, twenty-five-foot-diameter, spherical granite boulder, left possibly thousands of years ago by the retreating glacier, poised on the edge of the gorge above the brink of the falls, one gets the best general views of the whole cañon trip.

Sitting in the shade of this feldspar, crystal-studded monument, the Half Dome, eighty-nine hundred feet high, is in full view ahead on the east side of the cañon, with Mount Watkins, eighty-five hundred feet, on the west and Sentinel Dome, eighty-two hundred feet, in the center background of the picture. All these peaks are high, high above the tramper's prospective route down the awful prehistoric glacier's ground-out and polished groove in the solid granite where the river has vanished altogether from sight into the cañon's confined and apparently bottomless depths. Gazing down that narrow, forbidding gorge from here a nervous soul might think that it looked like a picture by Gustave Doré of the Valley of the Shadow of Death painted for Dante's "Inferno" or Bunyan's "Pilgrim's Progress," so abysmal and impassable does it appear. An additional grisly touch of realism was given to this picture one day later in the trip when, after a particularly exhausting experience, as I lay stretched out resting, high up on one side of the gorge I saw an unwelcome company of five black, soulless buzzards slowly drifting down the usually birdless and deserted cañon. They floated down in disordered array on the other side, and hundreds of feet below me, like a band of villainous looking vagabonds bent on a purpose better imagined than described.

Backward from this outlook referred to the view is unobstructed to the first long Silver Apron of Tenaya Creek at the head of Glacial Valley and up to Columbia Finger, 10,700 feet high. To the west are seen the peaks, the chimneys and the snows of Mount Hoffman that I had climbed a few days before—10,921 feet high—looming up above the fringe of glacier, denuded and polished domes that line the rim of this amphitheater, while to the east, right beside and almost overhanging you, twenty-five hundred feet above, are the scarred and riven cliffs and cirques of Clouds Rest, 9925 feet, and its adjacent bald, granite domes. These latter stand like gigantic, silent, unchanging monuments of the passage of some prodigious ice-cap that gave them their final polish thousands of years ago. Beyond, the tall trees of Yosemite Valley at the foot of Glacier Point can be plainly seen, apparently a few hours away instead of four days' travel as it took me.

The barren field of great unstable fragments of shimmering granite that must be traversed here is directly under these peaks from whose surfaces occasional masses are so recklessly hurled, to lie piled about in promiscuous and treacherous confusion below. If one is familiar with the Theory of Probabilities he can cross here in mental comfort, but one not so sure of the soundness of that theory may wonder how it will feel to be struck in the ribs or the nape of the neck by one of those slabs of granite, twenty feet square by two feet thick, diabolically caroming along at about a hundred miles an hour.

Passing this boulder referred to it seems to be all trouble. When I got below the band of bare granite and felt myself safely into the brush again I found myself in the midst of the worst talus I ever saw—great monoliths among whose arches and arcades I wandered like a lost soul, looking for a way to another great mass of snow that I wanted to reach for a cooling meal. I had to give up my frozen entrée for lunch that day, however, and continued my scramble through the thick brush to the stream, where I assuaged my thirst and took a welcome plunge into a pool. It is intensely hot in this V-shaped windless oven of the cañon in August, when it has been reached by the sun, even if this period is limited to the six and three-quarters hours between 8:45 in the morning and 3:30 in the afternoon.

This bit of a valley I called Talus Valley on account of the enormous size of the blocks and the further mass of evidence of this granite bombardment noticed in the valley above. The vegetation is so dense here, encroaching on the path of the creek as it does, and often overhanging it, that one can only proceed in the narrow bed of the stream—sometimes on the stones, sometimes waist high in the water. Through this thick growth great holes have been torn by these cliff bombardiers. Hole after hole is seen in the forest at one point here under a sort of chute, down which the winter's avalanches seem to be launched for their 2000-foot almost vertical rush. This phenomenon is not due to the spring floods, as the tops of the trees all point at right angles to the stream and not down stream, the direction the flowing water would have turned them.

In many cases the force that tore these trees from their foundations carried them so high up on the opposite bank that the river even at its flood did not touch them. In this little oasis in the cañon I saw three generous masses of snow remaining from last winter's fall, but I could reach only one of them through the impenetrable brush.

Near my camp, where, by the way, I had a fine fir-balsam bed, I noticed a three-foot granite cobble weather-beaten to a brown color by old age, worn round by long life in the river bed and yet broken in two as neatly as one would crack a boy's marble with a hammer on an anvil. The interior surface was as fresh as if it had been opened an hour before. The blow that divided that cobble would have made short work of a geologist.

From here the depth of the cañon, instead of being from fifteen hundred to two thousand feet, becomes thirty-five hundred, increasing to five thousand feet at the Yosemite Valley end, while the width at top and bottom of the gorge decreases from what it was in Glacial Valley—at the bottom especially.

This valley is about half a mile long. At its head is the 600-foot fall spoken of. Then comes a thirty-foot fall in two steps, though probably appearing as a single leap in the spring—then a Silver Apron in August or a waterfall in June about two hundred feet long, with boiling rapids and cascades intervening. In a small grove of pines I started a flock of noble grouse as I waded along in the narrow river channel, and saw great vermilion clusters of ripening chokecherries. I felt like one walking behind the targets at rifle practice and was in somewhat of a hurry that morning to get out of range of a possible resumption of that reckless boulder practice.

The creek bed soon changed to a barren V-flume-like condition. On one side was the glassy granite ascending uninterruptedly at an unclimbable angle for two thousand feet or more to Clouds Rest. On the other side were loose boulders and granite gravel in a state of very unstable equilibrium and starting dangerous avalanches of rocks and dust at slight disturbances. Progress was hard here, as wading in the stream was out of the question on account of its swiftness. It had its compensations, however, for I found a mass of last winter's ice in a fissure on the way, and, sitting down in the shade of an immense monolith bridging the stream, crunched contentedly away at it for half an hour with the temperature about 110 degrees all around me and no wind. My happy day-dreams were rudely disturbed by a huge slab of granite starting grinding down the incline beside my resting place and causing me to seize my belongings and flee. Soon after leaving this treat of snow I came to a point in the journey of which Mr. Gibbs said: "The stream suddenly plunged into an extremely narrow gorge. We seemed to have reached the final jumping-off place. It was as impossible to climb out of the cañon as to go back, and to go straight ahead seemed out of the question." It certainly did look discouraging for a while. With a fall of about fifty or sixty feet, the stream dropped into a narrow, barren gorge about twenty feet wide. At the brink of the fall the cañon was about fifty feet wide, with nearly vertical bare walls about two hundred feet high, sloping off then for several thousand feet to the domes on either side. At first as my only escape I planned with my fifty-foot rope and extensions to lower my traps to the dry rocks in the gloomy lower gorge and then descend beside the falls as far as the jagged edges of the horizontal, broken-off strata would permit, jumping the last ten or fifteen feet into the black pool seen below and swimming out. Danger of striking a hidden rock in the pool, getting a cramp in the icy water or not being able to continue down the narrow gorge after all made me hesitate. I then reverted to my original idea that the wild animals had a trail down this cañon and I ought to find it. I went higher up on the right or west side of the cañon, where a little vegetation in an apparent crevice masked the surface of the rock and found the trail that I had expected. There were two ticklish places where the narrow footway on the sheer wall of the gorge was a smooth, bear-polished granite shelf less than a foot wide, with a ledge about six inches thick only four feet above a bunch of scrubby live oak. One had to bend low and secure a very insecure hand-hold on the thick, smooth stratum overhead. A hundred feet directly below the torrent roared angrily over its steep, uneven, barren course. These two points passed and the "Jumping-off Place" or second of the three obstacles was conquered. I then returned, monumented the trail plainly through here and found unmistakable evidence that Mr. John Bear had used this shelf trail to pass by, and not more than one day before.

The scenery here with its colossal rock effects is always fascinating. One could admire the silent, overpowering majesty of it all, or he could expect his head to be knocked off any moment by falling fragments of this same majestic scenery. Confidence in the soundness of the Theory of Probabilities had settled my nerves for the trip, so I fared along on the lookout for creature comforts, borrowing no trouble.

The "Jumping-off Place" passed, like most human beings I pushed on down hill beside the stream as rapidly as I could, forgetting all about my serviceable theory of the bear trail, still on the right or west bank—the only one, apparently, on which I could proceed, as the opposite bank was a bare, vertical wall several hundred feet high. The water dashed wildly from shelf to shelf, squirming and twisting and leaping among the obstructions—now rapids, now waterfalls, now cascades — always noisy, always hurrying, nearly always unapproachable. Sometimes the brush and sliding ground drove me to the river. Sometimes the enormous boulders in the river bed or the impossible angled, glassy surfaces drove me back up the side of the gorge to the brush and the treacherous footholds. It was hard, hard work, even if it was going down hill. Virgil writes: ". . . . *facilis descensus Averno,*" but Virgil never tried to descend this Plutonian Tenaya Cañon.

At about six in the evening, two and a half hours since the sun sank behind the cañon wall, I reached a point where, sitting down to rest on a sixty-foot precipice, two hundred feet above the rushing stream, with my legs hanging over the edge, I thought I had found the first promising place in which to use my rope, the only use for which that I had found so far being as a pillow at night. By availing myself of several short spurs of rock and one small tree, it looked as if I could reach the bed of the river again. The stream, however, at this point at once entered a narrow defile thirty feet wide by three hundred feet high and disappeared from my view. The danger of getting down and neither being able to get back again nor to go ahead down the cañon, with darkness near at hand, decided me to turn back and descend to the bed of the river for the night at the first available point.

The first encouraging place that I saw was at a great ice bridge, where, sacrificing my laboriously-gained two hundred feet of elevation, I recklessly waded down through brush and dust to the brink of the final precipitous jagged side of the river's channel. Here I jumped from crag to crag to the roof of the bridge, back to a still lower ledge, to a boulder, to the stream, and I was at least where I could drop my load and get some water for my throat, parched by four hours of thirst-producing physical effort on that sun-baked slope, even if I could never climb out again.

In the little pocket that I had dropped into, the floor of the creek consisted only of cobbles varying from six inches to ten feet in diameter. I quickly dug out a fairly level place under the shelter of a great block of granite, cut for a bed an armful of beautiful fingerferns, which fortunately grew in great profusion in a damp niche here, and luckily found enough vagrant twigs for a fire and my supper. Just as darkness closed in I hastily completed my domestic arrangements and, lying comfortably stretched out under the stars, began to plan for the morrow.

I was in a sort of a well. On each side was an almost vertical side of the gorge several hundred feet high. Thirty feet below me was the ice bridge, three hundred and fifty feet long by fifty feet high, spanning the sixty-foot cañon like a great flat arch, and eaten away underneath by melting so that it stood from ten to twenty feet in the clear above the rocky bed of the boisterous stream. Behind me stood a guard of enormous thirty-foot high boulders forming crooked, concealed channels for the water, but offering little encouragement for a climber.

It would not have been so bad if it were not for the fact that one side of the gorge at this point was about three hundred feet high, perfectly vertical, and every once in a while a missile from above would arrive in my small backyard or on the ice bridge as if shot from a gun. I trusted to the Theory of Probabilities, but at intervals all through the night I was abruptly startled from sleep, above the continuous roar of the stream a few feet from my bed, by the ker-whang of a piece of granite on the nearby cobbles of the river bed or the ker-plunk of a fragment on the honeycombed roof of the ice bridge. The ice bridge dropped off a few huge lumps from its edges with disturbing crashes through the night also.

I was glad when daylight came. Logically I had figured out that I ought to make a dash of reconnoissance under that ice bridge and see if I could not proceed down the cañon on the river bed. Otherwise I must retrace my steps and seek a way over the domes—four thousand feet above me.

As I hastened along under that overhanging mass it seemed to me, to borrow from the imagery of the ancients, as if the evil spirits of the ice bridge might be saying exultantly to each other: "We've got him now. We've got him now." I finally started down the steep grade, and where progress is often impossible even with extreme agility and risk, and where it is always difficult and dangerous work jumping from polished boulder to polished boulder in the full daylight, where every move is a problem in itself, it was even more so in the half-light under this overshadowing, frozen bulk of dripping material at five o'clock that morning, four hours before the rays of the sun had reached the bottom of the gorge. I jumped this way and that, now slipping into the water, now landing safely on the rocks. I got wet from below and drenched from above. I noticed that the under surface of the ice was eaten away in large, hemispherical shaped cavities, and in one place it had been melted to a much greater height—ten or twenty feet perhaps—than elsewhere, and let in a burst of welcome light; but a very brief glance satisfied my scientific tastes that morning with those frigid drops like cold finger-tips reaching down uncannily and urging me on when I hesitated or distracting me when I was about to jump. It seemed an everlasting journey and was getting "on my nerves," when I finally emerged with great relief, only to find that my work had been in vain, as I could not proceed down the cañon on the river bed on account of the size of the boulders and the lack of anything on their smooth surfaces to attach my rope to. I rebelled against struggling back through that chilling shower of ice-water, up hill, and, finding convenient footholds in the gnawed-off granite strata, clambered up on the ice bridge and walked back over it. One hundred and eighty-two paces I counted as I climbed back over its uneven surface—at least three hundred and fifty feet long, on August 16th, at about five thousand feet elevation.

It then appeared from my small point of view as if I must climb Mount Watkins, eighty-five hundred feet high, on the west side of the cañon in order to get past this doubtful place. Again my original theory of an animal trail came back to me, and I decided to return and try to pick up and follow that bear trail. After three hours of heart-breaking, almost hand-over-hand climbing along the sliding or brushy west side I finally got back to a point just south of the "Jumping-off Place" pass and sighted a promising way up the side of the gorge on the east or left-hand side, which looked like a route that bears or deer who did not carry ropes would select.

I enjoyed a rest and a bracer here by plunging into a convenient deep pool of icy water, took the stones out of my shoes and the leaves, acorns and twigs out of my clothes, and on starting up my new route found it, as I had anticipated, the animals' route. It was 8:45 that morning when I saw the first ray of the sun as I was escaping from that sunless chasm and getting up on a restful brushy flat or bench three or four hundred feet above the river bed. Here I found to greet me fragrant azaleas or rhododendrons, delicate pink mimulus, brilliant scarlet buglers, blue larkspurs, harvest brodiæas, cardinal castilleias, chokecherries, thimbleberries, a pile of snow and a view all around. It was a most acceptable and cheerful change when added to the sunshine.

My experiences from nine in the morning to four in the afternoon, high up on that gorge wall, out of sight and sound of the stream, were various and interesting. As usual, I promptly lost the trail on the granite. I found beautiful flowers and I munched grateful snowcakes and tart manzanita berries, the crabapples of the mountains. I fought the chinquapin and the deer brush for hours, and I suffered many disappointments from ill-chosen, labor-devouring "short cuts" down the steep, bare, sizzling granite to some unforeseen precipice and back again, using the sparse scrub-oak brush for a rope or threading my way cautiously along the narrow crevices in the sloping, rocky surfaces. If I had followed the rule of keeping high up as the deer usually do I should have saved time and strength and probably have found their trail there. At four in the afternoon I came to a cleared avalanche chute down through the talus and brush and reached what I called "Lost River Valley" and still another remnant of a snowbank. Here I soon discovered that I had entered upon the grounds of Mr. Ursus Americanus, but I did not meet his majesty during my short stay.

In this welcome valley, full of cedars and poplars and Douglas spruce, full of fallen tree-trunks and great ferns over six feet high (one I measured was six feet five inches long from ground to tip), full of thimbleberries and prickly, red-cheeked gooseberries as large as blackberries, I walked for nearly half an hour along the white bleached cobbles of a stream bed without seeing a drop of water, though I could plainly hear the river emerging from the narrow defile at the head of the valley, with its usual noisy acclaim. Later I found the water percolating from the sand and gradually accumulating force enough to deserve the name of creek again.

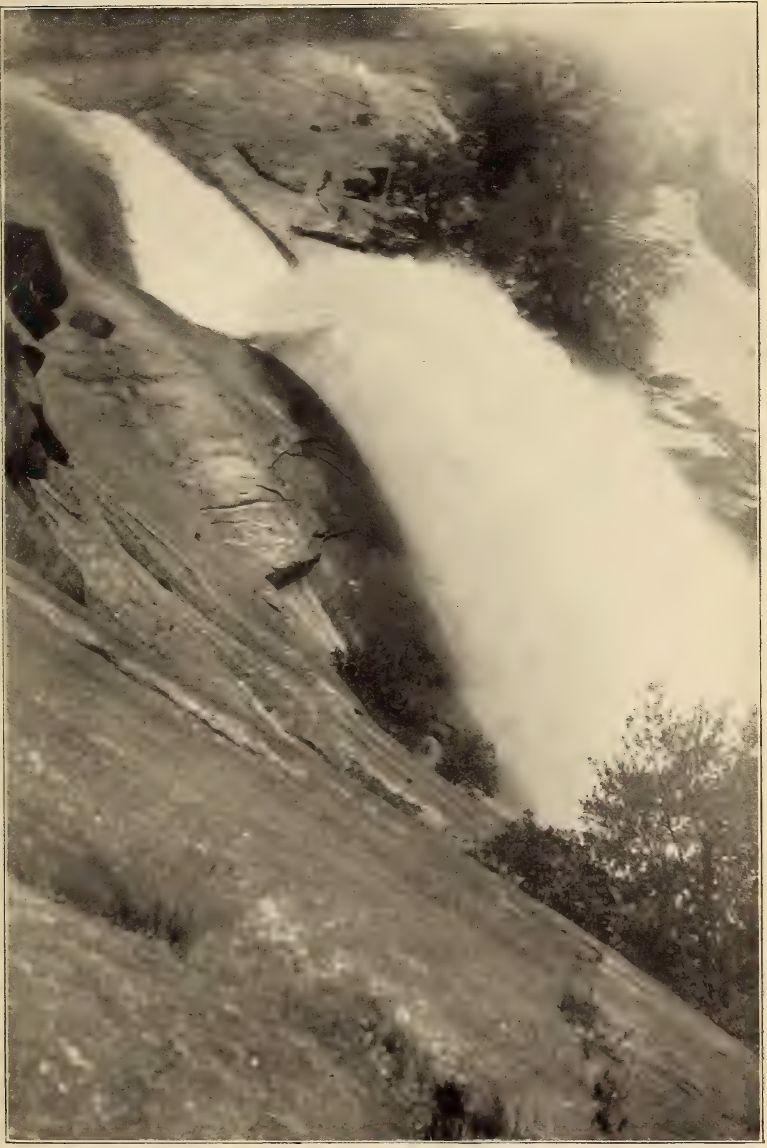
The view of Mount Watkins from the flat I traversed and from this valley is most impressive, and I believe that this huge, compact granite bulk, thirty-five hundred feet high, really appears from the eastern side, with its vertical front and its clean-cut sky-line more majestic than the great, scarred El Capitan.

From Lost River Valley the steep, down-hill way to Snow Creek beside the riotous stream and under the spreading branches is simply a tedious repetition of talus or moraine, underbrush and fallen tree-trunks, requiring four long, weary hours for the author, with his load of knapsack and bed, and following in many welcome places a well-marked bear trail. At Snow Creek, at the end of the Mirror Lake trail and a few miles above the lake, paper bags, egg shells and empty sardine cans told that civilization was near.

If unincumbered one can stick to the right-hand side of the stream right through, making use at the high falls of the few stunted yellow pines and junipers and the fifty-foot rope. If encumbered with sleeping bag and knapsack, it will be found easier to go on the left-hand side when passing the precipice at the lower end of Glacial Valley. Nails on the sides of the heels are advisable on this trip. My one regret was that I did not carry a camera instead of three pounds of unused rope.

This trip is a very interesting, somewhat laborious short trip, dropping 4,000 feet in an advance of about eight miles. The danger from falling fragments of granite is present during about half the trip and is an appreciable risk. The geology of the cañon is striking, with its glacial pavements, domes, cirques, and moraines, but I saw no unusual flowers, except twinberry and azalea, that cannot be found at the foot of Mt. Hoffman with greater comfort and in greater profusion. Practically from the time one leaves Tenaya Lake Valley every step must be carefully considered. In other words, the trip down the cañon is one long feat of mental concentration, with little of that care-free feeling that is supposed to go with vacations.

That a permanent and safe trail will be built in the near future from Yosemite Valley to Tenaya Lake



SNOW CREEK FALLS LEAPING OUT OF A PECULIAR BOWL-SHAPED DEPRESSION, TENAYA CAÑON.

From photograph by W. L. Huber, 1907.

THE BRIDAL VEIL FALLS, YOSEMITE VALLEY.

By courtesy of Marsh-Girvin Co.

through Tenaya Cañon seems unlikely on account of the annual destructive action of the rushing avalanches and the ploughing boulders.

From Snow Creek to Lost River Valley and around the impassable ice bridge defile through the brush and talus a trail might be constructed to a point near the Jumping-off Place Pass. Also from Tenaya Lake nearly to the precipice at the end of Glacial Valley a practicable way could be devised, but from this precipice past the Jumping-off Place over the talus fields and the smooth, steep, solid slopes I fancy a gap will be left for many years to come as a playground for the sliding snow masses and the bounding granite slabs of winter.

ON MT. ST. HELENS WITH THE MAZAMAS

By Marion Randall Parsons.

The Mazama Club of Portland, Oregon, was the first mountaineering club in the West to organize summer outings for its members. Fifteen years ago the pioneer outing was held at Mt. Hood, and each summer since then one or more of the great snow peaks of the north has been visited.

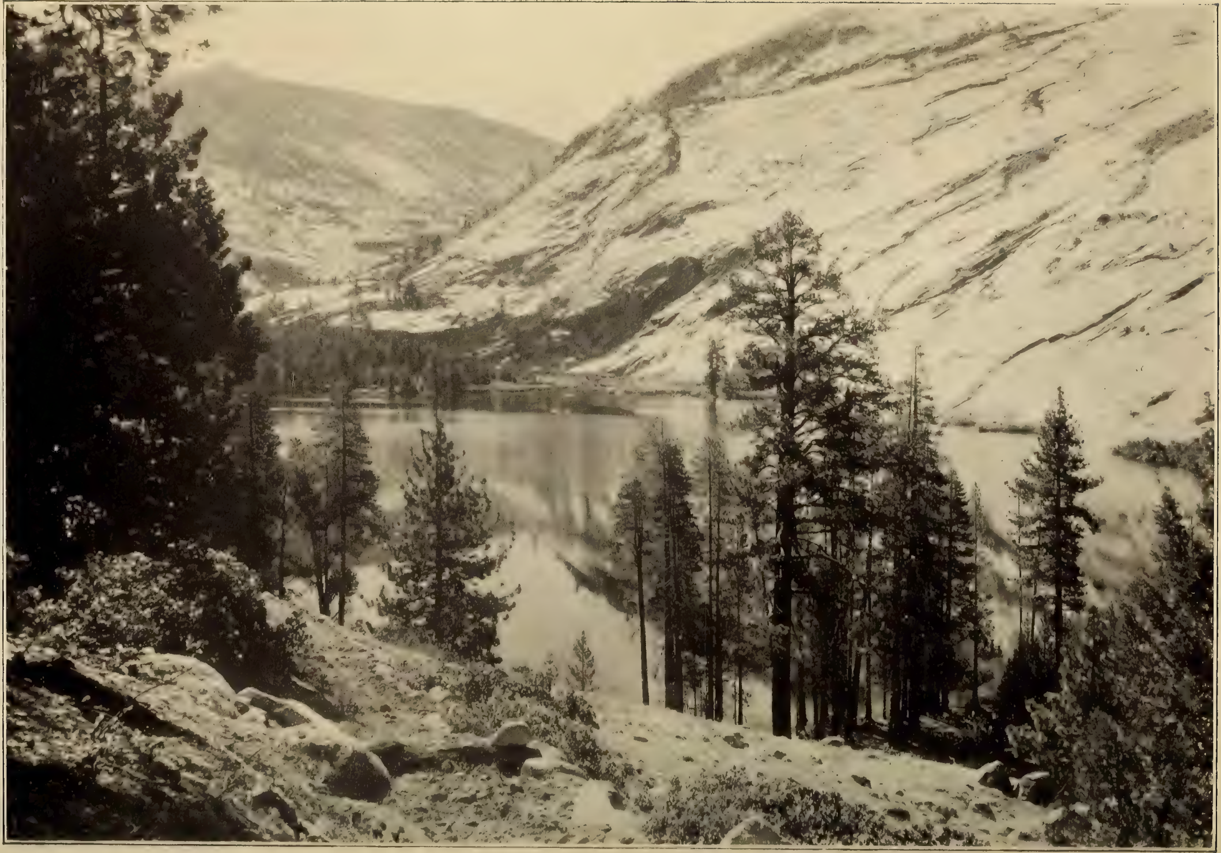
The Mazama Outings differ in many essential points from those of the Sierra Club. The weather conditions of Washington and northern Oregon do not favor protracted camping-trips, as those of California's summers do, and even in the brief fortnight of the Mazama mountain sojourn storms are only too apt to occur. The camp baggage, therefore, is necessarily cumbersome:—sleeping-tents have to be provided for all; canvas flies must be erected over kitchen stoves and dining-tables, and heavy bedding and clothing is imperative. As all this prevents the frequent shifting of camp, the nomad's life that we of the Sierra Club like to lead becomes impossible. Neither is it desirable, nor necessary for the enjoyment of the country. For instead of having countless ranges of mountains, hundreds of cañons, valleys, and rivers to explore, the entire interest of the trip centers about the one giant mountain, its glaciers, its vast snow-fields, and the flowery parks and meadows that encircle it, an emerald belt between the snows and the dark green of the forests.

It is among these open parks that the camping-grounds are generally found, for the upland forests, while rich in beauty, are too damp, dark, and cold for camping, and their dense undergrowth renders traveling through them, save on the infrequent trails, a feat advisable only for those strong of limb and wise in woodcraft.

MOUNT ST. HELENS, FROM SPIRIT LAKE.

MOUNT RAINIER AND MOUNT ADAMS, FROM SUMMIT OF ST. HELENS, 7:15 P. M.

From photographs by Marion Randall Parsons, 1909.



LAKE MERCED, IN MERCED CAÑON ABOVE YOSEMITE VALLEY (SEE PAGE 149).

From photograph by W. L. Huber, 1909.

An outing may be said to begin when one leaves the train and takes to the open road. So the St. Helens trip was inaugurated at Castle Rock, where we took wagons for the camp on Spirit Lake, fifty miles away. We traveled past the farms on the outskirts of Castle Rock, into a region of melancholy "clearings," where hundreds of tall, blackened stumps, hundreds of acres of arable land now choked with rank, unsightly weeds, told their tales of wastefulness and neglect. In pleasant contrast with the neatly kept farms where we lunched and spent the night.

We were early under way next morning, now in the forest among beautiful firs and hemlocks, whose branches were so closely interwoven that only little flecks and rays of sunlight penetrated their dense canopy. Here and there the delicate white blossoms of the Indian Pipe lifted their heads above the dark loam of the roadside, or a patch of brilliant red huckleberries or of yellow salmon berries gave pleasant excuse for lingering; and always a tropical luxuriance of ferns met the eye, ferns growing in the crevices of rocks, in the hollows of mossy stumps, even fringing the trunks of the fallen forest trees. Once in the course of the ride we caught a glimpse of our final goal, the lofty peak of St. Helens, rising above the forest-clad hills, faintly luminous in the noonday haze, as impalpable and unsubstantial as a vision.

In the mid afternoon we reached Spirit Lake, where a cool, delicious spring, a grove of firs, a warm lake for swimming and bathing, and a number of row-boats, generously loaned by a mining company of the district, combined to make an ideal camp. We began at once to explore the surrounding country, making trips to Harmony Falls, to the mines across the lake, and climbing the lesser hills and crags near by.

Our ascent of St. Helens was to take place from the north. In 1898 the Mazama Club conquered the mountain from the south, finding it the easiest and least dangerous of the snow peaks of Washington, but the northern side was to all our party untried ground.

About noon of the day preceding that set apart for the climb we gathered, thirty-six of us, at the commissary, with the lightest possible outfit for the night, and lined up for the start. No pack animals could be secured, so the men of the climbing party made pack horses of themselves and loaded up with the food and blankets of the entire party.

Our way led for half a mile past the outlet of the lake and down the Toutle River to the north of the Dry Cañon, up which we turned. For a little distance through its lower reaches abundant springs supply a cool, musical stream, and the shade of tall trees is not wanting. But all too soon we climbed out of the shadow into the hot, open cañon, unrelieved by tree or blade of grass, that leads up to the snow-line.

St. Helens, geologically speaking, is an adolescent, the youngest of the great volcanic snow cones of the north. Even to the superficial observer it is evident that the vast slopes of pumice stretching from snow-line to timber-line have not lain exposed to the disintegrating effects of sun, frost, and rain for the many long ages whose passing has transformed the lava flanks of Rainier into a wonderful flower garden. Far down on the slopes of St. Helens dwarfed firs and pines are making a brave struggle for a foothold, and grasses and tiny strawberries are creeping hardily towards the snow; but many a long year will pass before the white cassiope bells and the starry erythronium lilies and the shaggy-headed anemones will bloom each summer besides the receding snow.

Our camp was made in the shelter of the highest timber, if timber it could be called, that was little more than shrubbery, high on the bleak mountainside in a little depression where the winds that blew off the snow could in some measure pass over our heads. Blazing fires, supper, and an hour of story-telling brought us cheerfully to bedtime, when we lay watching the brilliant stars and the dim outline of the mountain against the sky until we fell asleep. Little did we guess then what our next night impression of St. Helens would be!

We arose at five next morning, but there was some delay in starting, and we were not on the march till past seven. A little above camp we dropped into the floor of one of the numerous glacial cañons by which the mountain is furrowed, and by means of it approached the first snow-slope. Before we had fairly begun to climb, the sun, whose earliest rays had reached the northern slope, had so far softened the snow that it made slow, difficult going. Nor was this the worst. On St. Helens the arms of rock that extend into the snow are composed of lava boulders loosely imbedded in pumice. Wherever rock and snow meet, the action of the sun sends cannonades of rocks down upon the slopes below. We were seldom out of range of this bombardment. Fortunately the rocks that fell were small and scattered, and the snow was seldom so steep that we could not dodge; but the thought of the havoc that might be wrought in our ranks should the mountain choose to let loose the full strength of its batteries scarcely added to the pleasure of the climb. We encountered no dangerous work on the lower part of the mountain, but twice the crossing of crevasses consumed so much valuable time in the adjustment of alpenstocks and ropes that it was not until two o'clock that we reached the top of the "Lizard" and paused for lunch.

The Lizard is a long promontory of rocks, a divide between two glaciers. Its tail loses itself in the lower pumice slopes, while its head stretched far upward, two thirds of the way to the summit. It was our first opportunity to fairly gauge our rate of progress—hardly an encouraging one in view of the steeper climbing that must lay ahead. This was the time, of course, for us to acknowledge our defeat and turn back to make a better start some other day, but to give up was the last thought in the minds of most of us. Eight of the party did wisely determine to return, but the rest of us, in the cheerful optimism of half-way up, thought we might "if we tried" reach the summit by four-thirty.

However, there was still a long snow-field to be traversed, still another rocky promontory to be climbed, and it was close upon five o'clock before we reached the foot of the final steep ice slope that guards the summit. Here it was necessary to cut steps and to use the rope, and although the difficult place was short, probably not more than two or three hundred feet, our progress had to be slow. At last we reached the top of the ice, climbed a little rocky eminence, and emerged upon the broad snow-field that crowns St. Helens. The true summit lies at the southwestern extremity of this field, so we crossed it and at 7:15 attained the highest point.

To-day, as we who stood there recall the scene, memory assures us that it was one of the most impressive and beautiful that our eyes had ever met. For hundreds of miles the forest country lay stretched at our feet, dark and shadowy and half veiled in mist. Westward the great red sun, vanishing in a rosy glow of fog, seemed also at our feet, so far were we set above the sea and its dim horizon line. The sky was bright with rose and yellow and palest green. North, east, and south of us the three great snow cones—Rainier, Adams, and Hood—were so aglow with sunset light that it seemed as if lingering flames must still burn on these altars of ancient fires. Before their glory was gone night had closed in upon the lowlands. The winds of the daytime were stilled and the silence of the high places was upon us. The lowland nights are full of sound, a thousand wee rustlings and whisperings and flittings of unseen winged creatures, the stir of leaf, the tinkling drop of water; but in the white lands when night comes all is silence, a silence significant not of death, but rather of the unborn ages yet to come.

All this we can remember now, but at the moment the wonder of it was almost lost in the sense of loneliness, of vastness, of piercing cold. That enormous bulk of ice, snow, and treacherous rock separating us from fire, water, food, and the haunts of man was all that our minds could consciously grasp. We rested only long enough to register our names and to elect to membership in the Mazama Club those who had qualified by the ascent. Short as the delay was, our captain was already impatiently calling us to hurry. The bitter cold, too, gave scant encouragement to loiterers, so we hastened to start on the descent.

It has been asked why we did not choose the less hazardous experience of remaining on the summit all night. We might have more safely done so, indeed, had we been better equipped for it; but some of us were without sweaters or coats, our feet were soaking wet and almost numb with cold, and we were without food. With several rather delicate women and one boy of twelve in the party, the risk of exposure was deemed too great.

The sun was now quite out of sight and a chill gray twilight was creeping up the glacial cañons from the darker wooded valleys. As we stood on the brink of the ice slope the last gleam of color faded from the distant mountains. A luminous, winding band of silver, marking the course of the Toutle River, still shone in the dark forest to westward, but all else was gray and cold, desolate and forbidding.

We were placed in line, alternately, a man and a woman, and the rope stretched between us with the caution not to grasp it except in case of a slip, but to pass it lightly through our hands. It was fastened at the upper end to two alpenstocks which were planted as securely as possible in the ice and were held by a strong man. Two men then went ahead with ice axes, with which they enlarged the steps we had used on the ascent, for the surface of the ice was now so hard frozen and slippery that every change of position had to be made with the utmost care. The step-makers went forward to the end of our fifty feet of rope, and then the signal was given for us to advance. Facing the mountain, alpenstock in one hand, rope in the other, we went down backwards as on a ladder, one step at a time, as far as the line would permit. Then we halted. The last man followed, holding the end of the rope, planted it again, the stepmakers went forward, and again we advanced six or eight steps. Sixteen times the rope was shifted in this manner, and sixteen times we stood for five or more minutes motionless in the freezing cold, our hands and feet so numb that it seemed almost impossible to move when the signal to change position was given.

It was fortunate that all of us were not equally aware of the gravity of the situation. The rope, insufficiently secured as it was, could not have borne much strain, and, as our company was largely composed of tenderfeet, there was among us scarcely one in five who knew how to save himself from the consequences of a slip on the easiest snow slope, much less on the glassy, steep surface of that ice. Had some of the novices realized how easily a single misstep could have precipitated one or more of us into the cruel pile of rocks that lay so far below, an attack of unreasoning panic might have brought about that very catastrophe. That no accident did occur is due in great measure to the cool, unhurried, confident manner of our leaders, to whose work that night too high praise cannot be accorded.

We reached the rocks at last, but not until every ray of daylight was gone. The young moon, from which we had expected some assistance, was hidden behind the mountain, and though its light could be dimly perceived on the distant landscape below us, we were in shadow, in almost complete darkness. While we stood there, shivering, hungry, inexpressibly weary in body, and in mind almost despairing of ever reaching shelter that night, two lights flickered up, far, far below—beacon fires that our comrades had kindled to help us find the way. It is difficult to describe what hope and encouragement those two little friendly gleams put into our hearts. They typified the warmth and sympathy of human fellowship as against the merciless indifference that nature in her sterner moods shows to the needs, even to the lives, of men.

Our way now for awhile led down a rocky crest, composed, like much of St. Helens, of large, easily detached boulders set among smaller rocks and loose pumice. We formed in a close phalanx, two and two, a man and a woman, with the rope between us. Walking as near together as possible, we moved slowly forward. If a large rock showed signs of starting we threw our united weight against it, and either stopped it or deflected it to one side, where it could roll its course to the foot of the mountain, if need be, without harming us. The detonations of these crashing rocks, the crunch of our marching feet, and the flash of steel caulks on the stones remain vivid recollections of this part of the descent.

A rock slide was the next incident. Such great quantities of rock were displaced with each step that it was judged wisest to cross this only two at a time. By holding hands and keeping step the transit was made safely, though with a tremendous accompaniment of rolling stones. We emerged from this on the snow, fortunately a deeply furrowed and not very steep field, which brought us to the top of the Lizard. So far we had been following our course of the afternoon, but here, instead of descending to the snowfields on the right from which we had made the ascent, we concluded to keep on down the Lizard to avoid if possible the steeper snow, which, in its frozen condition, would have been very dangerous. The Lizard's backbone was composed of less formidable boulders than we had encountered nearer the summit, but even these smaller missiles became objects of terror in the darkness, especially as, owing to the delay on the rock slide, the party had become scattered and it was impossible to know in what direction danger lay. The cry of "Rock coming!" was so frequent and was attended by such breathless moments of suspense—ears trying to locate the ominous crashing, eyes straining the blackness in a vain attempt to see the threatening object—that for many a night afterwards we were haunted by it in our dreams.

Once we followed the wrong arm of rock and found ourselves blocked at the end by a net-work of crevasses. Here, at the urgent request of a distant voice from the snow-field, we sat fast for ten minutes holding the rocks down until the explorer below was out of range before we could retrace our way and climb up to the western arm. The camp-fires were growing closer now, but there was still another rock ordeal to pass through, a narrow chimney leading from the Lizard to a snow-field, nearly all of the upper part of which was within range of the chimney. This, however, was the last of the rock bombardment, indeed the last difficulty of the descent, for the snow-field led by an easy grade to the edge of the pumice slope.

At two o'clock in the morning, nineteen hours after we had left it, our stumbling feet brought us to the temporary camp, with its great fire, its steaming cups of chocolate, its bread and meat, and greatest blessing of all, its sleeping bags, into which we straightway tumbled without even the ceremony of removing the grease paint from our faces.

We were none of us the worse for the experience next day. On the contrary, we awoke with a sense of exhilaration. The sun seemed to shine with a more cordial warmth and the joy of being alive on good old Mother Earth was a little keener than on an every-day morning. We were a little disposed to philosophize on the comforts of the commonplace and the folly of seeking to attain high summits, but we were exceedingly glad to have been there just the same.

The few remaining days of the outing sped pleasantly, though the eve of our departure brought the rain which had fortunately spared us so far. The final day and night in camp passed in that jumble of discomfort and hilarity which storms generally produce in camp, provided the elements have been considerate enough to reserve their bad behavior for the last days, when good fellowship is at its height and a certain jaunty indifference to cold, wet, and such extraneous matters has become the criterion of one's position in the social economy of camp life.

And then came the breaking of camp, and we followed the homeward road back through the forests to find that while we had been on the heights autumn had been busy with the low country woods. For on every maple and dogwood were painted her warning signs, telling us that it was time to leave the summer country and go back to the world of roofs again.

A HIGH SIERRA CIRCUIT ON HEADWATERS OF KING'S RIVER

By Wm. Conger Morgan.

The stages had rolled away one by one, leaving in their wake a trail of dust not so tenuous but far more persistent than the trail of a meteor. Our little party stood alone in the shadows of Giant Forest, as we were to prolong out outing another fortnight by tramping through the High Sierra at the headwaters of King's River.

In the cool of the morning the descent of the Marble Fork and even the ascent of the other side in the bright sunshine was most invigorating and delightful. We paused to look down the valley to where the cañon walls rose steep, and to note also the gathering storm-clouds which later in the day sprinkled us with fitful showers. Up and across Silliman Creek our trail lay, past Willow and Cahoon Meadows, whose flower-dotted surfaces had been badly ruffled by the packtrain returning from its summer outing with the Sierra Club. Near East Fork we noted a new trail built out to Twin Lakes, which empty into Sugar Loaf Creek, one of the tributaries of Roaring River. Pausing for lunch at J. O. Pass, we met a party coming out from King's River whose members assured us that Glenn Pass, over which we hoped soon to travel, was unquestionably impassable for animals since there was no snow to cover the talus.

The divide between the Kaweah and the King's rivers makes interesting travel. At Profile View the late afternoon shadows had settled in the depths of the distant cañon, but the heights were yet splendidly illuminated. To the right loomed Brewer and its two stalwart guards, King, Gardner, and those other peaks that make the upper King's River unsurpassed in the Sierra. Down the slopes and through Marvin Pass we hurried to Horse Corral on whose broad acres, knee-deep in grass, were grazing a score or two of animals. A cup of hot tea was Mr. Kanawyer's welcome as we dropped into the grass for a few moments' rest, and a camp-fire big as the biggest lighted up the little grove in which we slept that evening.

The next day's journey led us through Summit Meadow and then down on to the floor of the King's. The day was hot. A glaring sun beat against the lofty walls of rock and its reflected heat gave to the gorge the character of a Turkish bath. Scarcely a breath stirred and the river seemed to keep the air at the maximum humidity. Walking was oppressive; everything seemed uninteresting; and the writer recalled vividly his first entrance into Yosemite Valley when, on a similar day he toiled ankle deep through the granite sand below El Capitan and would not have given a copper to have had Bridal Veil Falls in his back-yard forever. But such days pass! The six miles from Cedar Grove to Kanawyer's seemed twenty, but were finally over; and a plunge in the snow-fed water washed away the dust from our faces and the fret from our minds.

We laid over a day to outfit for our round trip into Paradise Valley, up Wood's Creek, over Glenn Pass and down Bubb's Creek. Our first day consisted of a pleasant stroll up the South Fork through the timber and shrubbery that covers the river bottom. We watched the rainbow trout in the crystal water and picked cool, luscious berries from bushes drenched with dew. At Mist Falls we watched for a long lunch-hour the cataract of jewels pouring over the rocks and forming rainbows which framed-in the exquisite picture of Gardner Falls on the opposite wall of the cañon. Then came a scramble for a couple of miles of bad trail over very wicked talus, followed by a leisurely saunter through the wooded meadows of Paradise Valley.

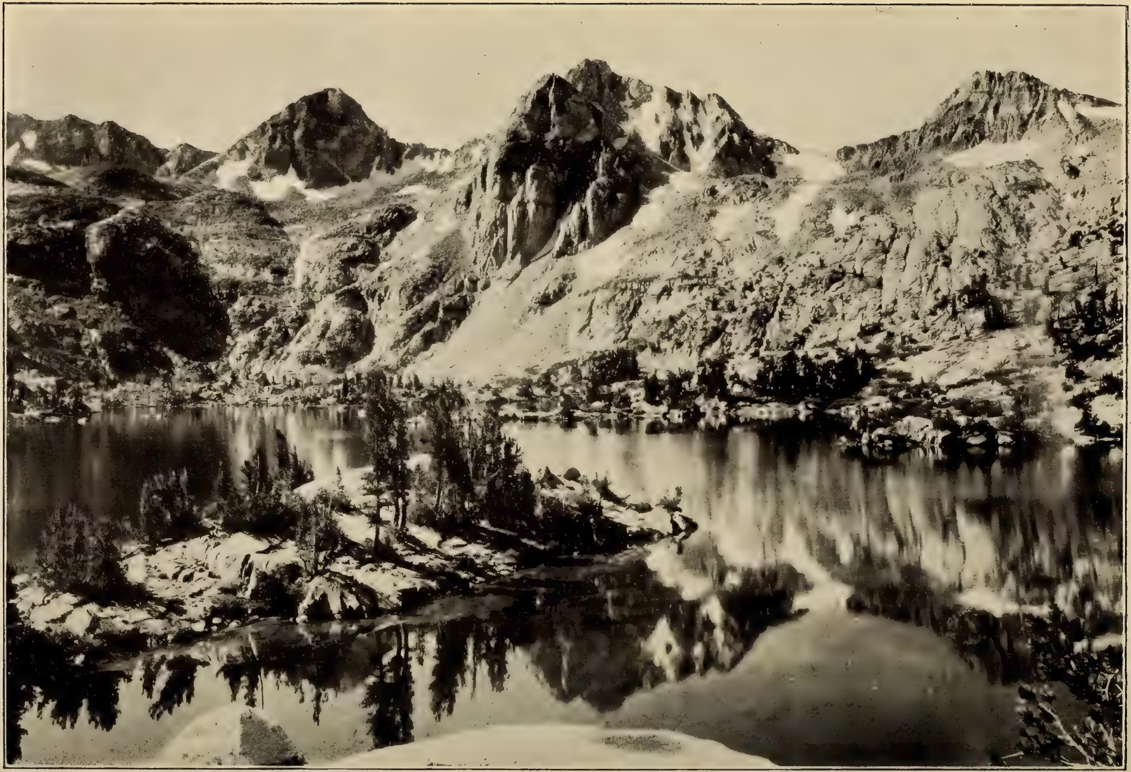
Knowing that the Sierra Club had stocked the creeks of Paradise Valley with Eastern brook trout, we were anticipating the pleasure of beholding these dainty fish within the rim of our frying-pan, so while passing up the valley we kept a sharp look-out for them. But, though the water seemed ideal, we saw no trace of a fish. Snakes there were in this as in the other Paradise, but not a trout of any kind; and although it seemed useless to "go a fishin'" when no fish were to be seen, we dropped our flies into most of the promising water, but neither from riffle nor pool did we get a rise. What has become of the fifteen thousand fish planted here in 1906? Have they worked their way up the stream to the headwaters? We saw nothing of Eastern brook trout up Wood's Creek. Or have they gone down over Mist Falls? Some certainly have, for more than a dozen have been caught about Kanawyer's during 1907 and 1908. It is much to be hoped that most of them may yet be found in the waters of the upper basin.

We made camp that night at the foot of the spur which so conveniently runs out on the floor of the valley, affording a magnificent view of the three cañons radiating from this point: to the north the gorge beneath Muro Blanco, to the east the valley of Wood's Creek looking to Mt. Baxter and Sawmill Pass, to the south at our feet the beautiful Paradise. Our sunset reveries from this bluff were interrupted by the bringing in of a fine buck which furnished us with venison for several days to come.

The ardor of the next day's tramp up Wood's Creek was dampened somewhat by showers and the fear of showers. Our views were confined to the immediate valley, for a pall of cloud rested on the shoulders of the titan peaks—King, Gardner, Rixford, Black, Diamond and Baxter—which guard Rae Lake. We made camp in the rain, but by night-fall a few stars and a faint moon appeared. As we sat about the camp-fire, drying out and enjoying the warmth which worked its way into the marrow of our bones, the flickering shadows brought to our minds thoughts of one who was "sleepin' out an' far" that night somewhere beneath the crests of the same peaks that loomed above us.

A VIEW ALONG THE RIVER, PARADISE VALLEY.

From photograph by W. L. Huber, 1908.



RAE LAKE, WITH MOUNT RIXFORD IN THE CENTER OF THE SKYLINE.

From photograph by W. L. Huber, 1908.

The succeeding day was given up to an investigation of the region. Here glaciers have cut down into the solid rock for more than a thousand feet, scooping out a broad basin between the ofttimes steep and well-polished sides. Above the lake rise the ragged remnants of rock which mark the original levels when the ice-king began his carving. The whole spirit of the region is wild, untamed, untameable. The smooth and rounded surfaces of Fin Dome serve by contrast to emphasize the sharp and rugged lines of other peaks. Breathing in the air from an elevation two miles above sea-level, one feels the boldness and strength of the mountains in each bone and muscle and longs to climb each peak and gaze out far and wide from this crest-ridge of the continent. But for another day the climbs; to-day the limited look-out and such as may be gained while circling the lake with fishing rod in hand.

And such fishing! From the rocks we could see them, the hungry monsters that inhabit the depths of Rae Lake, coming up to the surface occasionally for the sun-loving insects. A cast of the fly, a swirl of water, a tightening of the line as the angered fish feels the sting of the barb, a mad rush and then—well, we didn't lose either rod or reel, but all else went in the first experience of more than one of our party. When later, new leaders and tested lines had been reinforced by greater care and caution, several beauties were successfully landed and record catches established by all.

It is a well-known fact that when newly planted in waters furnishing an abundant food supply, trout grow to enormous size. After a dozen or twenty years, when offspring "compounded annually" cause a struggle for existence, the size of the fish diminish and all grow to about one weight. In many lakes of the Sierra the second stage has been reached, notably so in Bullfrog Lake, where the fish run remarkably even and about ten inches long. In 1901 fish were first planted in Rae Lake. They are now plentiful and very large. The heaviest caught by any of us was something under four pounds. A "six-pounder" was reported taken by a man whom we met coming down Wood's Creek.

In "Our National Parks," John Muir speaks of the headwaters of King's River as being particularly liable to mid-summer thunder showers. If any of us, as the result of experience elsewhere in the mountains, felt disposed to question this statement, our doubts were entirely set at rest; for during ten days every afternoon brought rain in larger or smaller quantities. While at Rae Lake we were treated to a Class A thunder storm. For more than two hours rain fell in torrents, lightning flashed and thunder rolled through those mountain wilds until it seemed as though the foundations of the earth must be giving way beneath our feet and we might expect the crags to topple above our heads any moment.

Our experience would suggest the advisability of being provided with some rain-proof garment when starting for a trip into this region. A jacket of waterproof silk, reaching below the hips or even to the knees, would be light, could be rolled tightly into a small bundle and would be very serviceable as a protection against cold as well as water.

On the following morning we set out early to conquer Glenn Pass. The trail indicated on the government maps crosses Rae Lake where the long neck of land runs out into the water so suggestively. Our examination of this route on the previous day suggested a possible soaking for men and animals, an indication which we have since learned was fully borne out by the experience of another party* which did cross at this place. We crossed the lake at the narrows, half a mile further to the north, and found it a much better ford.

Turning south we picked our way along the lake shore, gaining elevation as opportunity offered, until we struck the Glenn Pass trail running west. This leads over rough talus lying at a sharp angle. After crossing the chain of lakes lying in the basin of a little cirque, the trail starts right up a steep talus pile of large rock for the 12,000-foot level. This rise of 800 feet can be made easily by foot-folk, but it looks difficult for laden animals, and the trail is very bad. In order to avoid any danger from falling rocks, most of the party made the ascent before the packtrain started. Imagine our surprise, then, to see them appear on the sky line in less than an hour after leaving the lakes!

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*Sierra Club Bulletin, Vol. VII, No. 1, p. 22.

From the pass the government maps indicate a trail running westward to Charlotte Creek. Five hundred feet below the pass to the south side lies a little lake, or rather two lakes, which empty into Lake Charlotte two miles below. One of these lakes is not shown on the government map and doubtless was well muffled in ice and snow when the survey was made. Between the pass and the lakes an enormous fan extends. Forsaking the trail, we plunged straight down hill to the lake and followed down its outlet without difficulty, saving half the distance and all of the "very bad going"* which we have since learned is to be experienced in attempting to follow the indicated trail.

We did not stop at Lake Charlotte, although it is one of the most beautiful mountain lakes and is filled with fish, but enjoyed it only while skirting its shores on our way to Bullfrog Lake, where we camped. Pictures of this region usually consist of white snow and white sky, separated by a very ragged line of black rock. The exceptionally light snowfall of the year 1908 showed us the true Bullfrog without its mantle of white. On the one hand the rounded, comparatively gentle slopes of Rixford, on the other the perpendicular ramparts of the Kearsarge Pinnacles; before us the lake, skirted by the trail leading over Kearsarge Pass, probably the oldest gateway across the Sierra Nevada. We laid over here for a day, and while some of us spent the time fishing and idling among the beautiful Kearsarge lakes, others climbed up to look over the brim of the cup in which we found ourselves.

Starting from the level of the lake, about 10,500 feet, we ascended the peak to the northwest of Bullfrog which, rising something over 12,000 feet, looks down upon the little lakes toward which we had plunged on the day before. Following along the ragged rock of the ridge we scaled the pinnacle above and to the east of Glenn Pass, then scrambled to the top of Rixford, crossed over to Gould and rested upon its fantastic summit. From here we descended on the eastern side of the divide to linger for a few moments about Heart Lake, then crossed back over Kearsarge Pass on the old trail.

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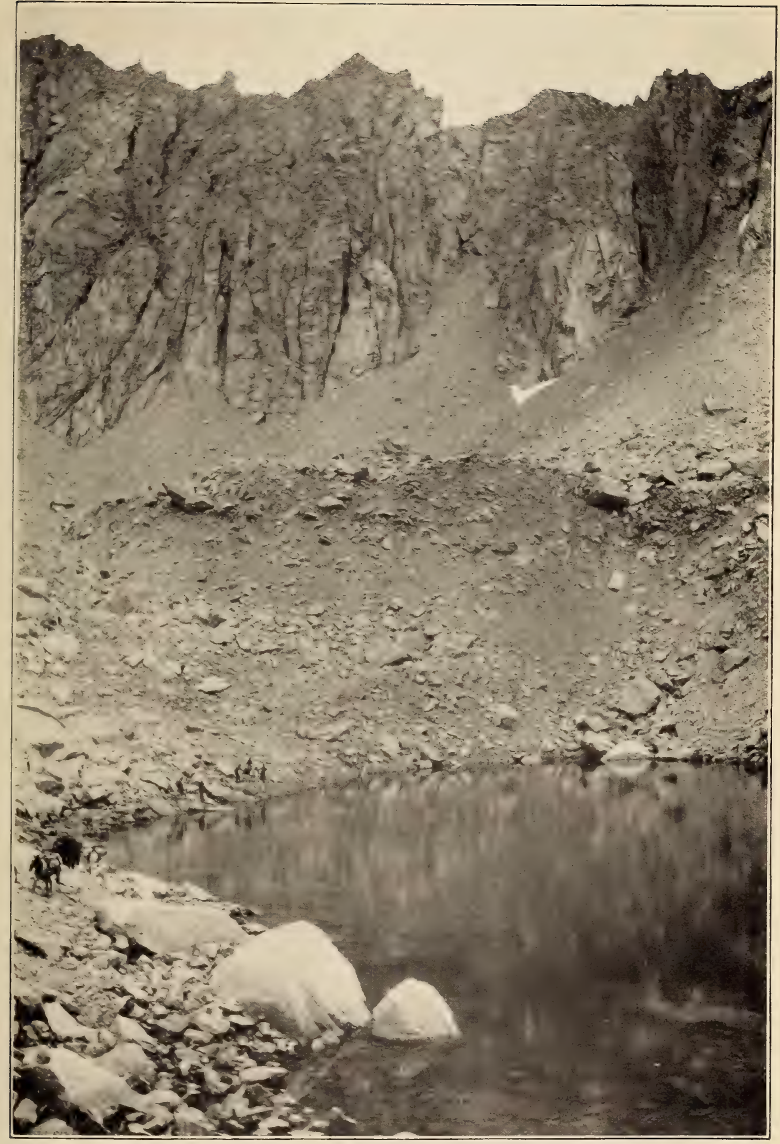
*Sierra Club Bulletin. loc. cit.

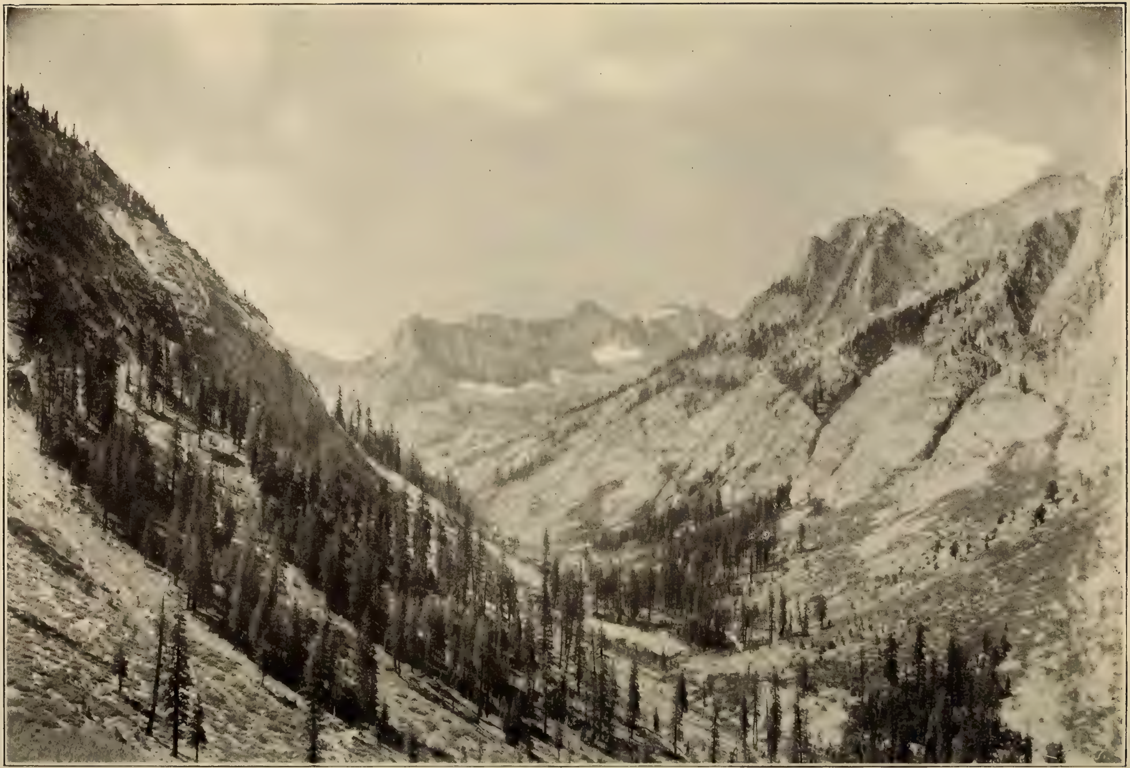
Much of the sky was overcast with black storm-clouds and sunshine alternated with rain, producing most weird and beautiful cloud effects. Though by no means as high as many another peak, Rixford, set in the center of what is one of the most ragged sections of the country, offers to the mountaineer an unsurpassed spectacle. Half a mile below our feet lay Rae Lake appareled most exquisitely in purple and green. Above the glacier-swept valley, the mountains lift their heads in defiance to the storms. To the east lies the long sweep of Owens Valley. To the south are Bullfrog and the Kearsarge lakes. Above them is the sharp arête of the Kearsarge Pinnacles and University Peak, the white patches of snow emphasizing by contrast the extreme blackness of the storm-drenched rocks. On the horizon, piercing the sky-line with their sharp and angular crowns, stands that unsurpassed cluster of peaks which, radiating from Central Peak, includes Bradley, Keith, Junction, Stanford, Deerhorn and the spurs of the two Videttes. To the west, the gentler valleys of Bubb's Creek and Charlotte Lake. To the northwest, between Mt. Gardner and Fin Dome, the Sixty Lake Basin, thickly studded with emerald tarns. In five hours we traveled as many miles and never set foot below 12,000 feet. Nameless peaks by the score loomed about us on every side. The most vivid impressions of the whole outing came from this day in the clouds in the region of Rixford and Gould.

Next day we moved down Bubb's Creek to Junction Meadow, about a mile below East Creek, where we



LITTLE LAKE, BELOW GLENN PASS.

From photograph by W. L. Huber, 1908.



LOOKING UP EAST CREEK TOWARD MOUNT BREWER.

From photograph by W. L. Huber, 1908.

camped in a beautiful cluster of huge pines. Passing through the poplars that grow in profusion along the bed of the stream, we noted the work of avalanches which occurred in this region in 1906. The trees were broken and twisted and torn in an amazing way. Whole sections were laid as flat as wheat in the swathe. Many trees had been broken half off and laid prostrate. Some of these had received sufficient sap from the shreds of bark connecting the stump with the top, to remain alive, and now, accustomed to short rations, were green again, turning their heads once more to the sky. So badly was the timber down that for considerable stretches a trail had to be cut out with axes.

A side-trip up to East Lake and Lake Reflection occupied the next day. The air was so clear that the summit of Brewer seemed within a short hour's walk, yet five hours would probably have been much nearer the truth.

In the morning we returned to Kanawyer's and the next day started on the trip out of the cañon, spending a night at Cedar Grove and another at Bearskin Meadow. The dash and zest for the trail were laid aside at the Grant Grove of Big Trees, and resting in the shadow of a giant sequoia, for an hour or two we allowed the peace and quiet of the Sabbath morn to steal into our hearts. Two nights and the intervening day we rested at Sequoia Lake, near Millwood, enjoying most thoroughly our long swims in the warm water.

And although the embers of the last camp-fire are dead, the glow in the heart kindles anew as the twilight hour creeps over us with its subtle spell calling forth the spirit of reminiscence. Again we feel the bracing air of the mountain-side laden with the fragrance of balsam and fir. Once more the song of birds mingles with the whispering of the pines and the murmur of the brook. We start afresh on the dewy trail; we climb the heights; we seek the noon-day shade; and then, as purple shadows gather on the western slopes, return to camp and friends and—fall asleep.

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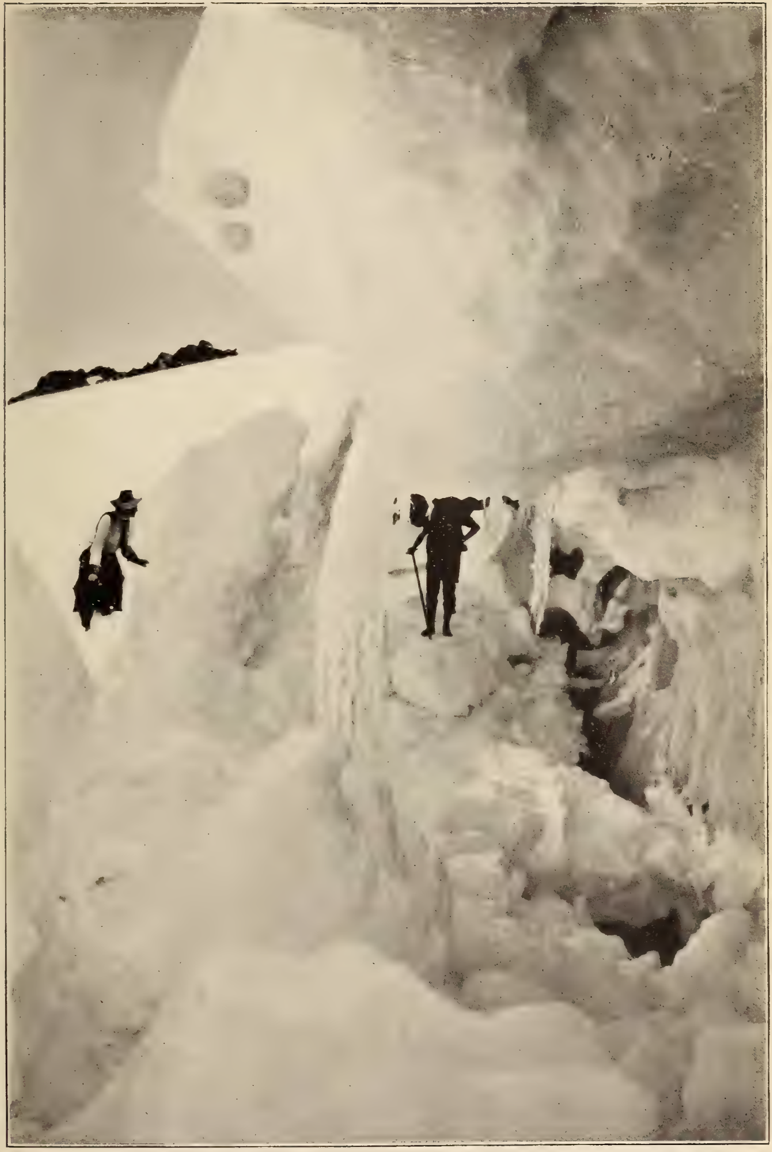
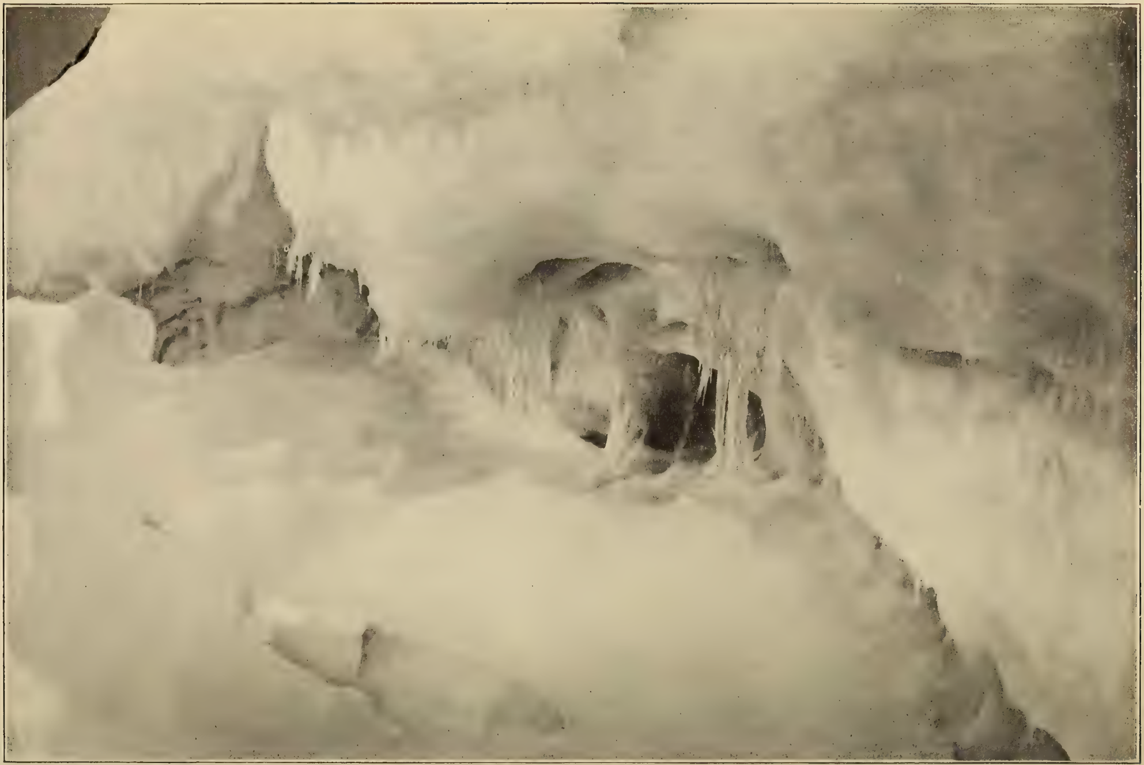


BERGSCHRUND OF THE MOUNT LYELL GLACIER, YOSEMITE NATIONAL PARK.

From photograph by W. L. Huber, 1909.



ANOTHER PART OF THE BERGSCHRUND, MOUNT LYELL GLACIER.

From photograph by H. E. Bailey, 1909.

REPORTS.

Report of Outing Committee, 1909 Outing.

The 1909 Outing of the Sierra Club to the Yosemite National Park was by far the most successful outing in the history of the Club. Boston, New York, Philadelphia, Chicago, San Antonio, Portland, etc., were represented by members of the party. The transportation and commissary problems were so managed as to leave little room for improvement. It was discovered long before the Outing that the number of applications would far exceed the limit originally set of 150, and rather than disappoint more than necessary the limit was raised. There were 180 regular members of the party, and including employees, assistants, and guests, nearly 220 persons started from the Yosemite Valley on the grand circuit of the park.

It is doubtful whether any finer trip, combining such varied and magnificent scenery with such splendid camping opportunities, can be had in the same number of miles on the face of the globe. The circuit, beginning with Yosemite, included the Little Yosemite, Upper Merced Cañon and lakes, the attractive high mountain camp-ground at Tuolumne Meadows, the Grand Cañon of the Tuolumne, Matterhorn Cañon, Rogers Lake, Pleasant Valley, and the famous Hetch Hetchy Valley. Climbs of Mts. Clark, Ritter, Dana, Lyell, and Conness were made by members of the party. A knapsack party of fifteen went to Mt. Ritter and one of forty down the wonderful Tuolumne Cañon. Financially the Outing was a success and a small balance remains to carry preliminary expenses for the next Outing. Neither illness nor accident of a serious nature occurred to mar the pleasure of the trip.

The presence of John Muir during the entire trip added much to our pleasure, as did the wonderful music of Signor de Grassi and his wife, and the lectures on trees by Dr. Jepson.

A serious problem confronts the Outing Committee. The Outings have become so popular that over fifty applicants for this last Outing could not be accommodated even with the increase of membership permitted. The applications now on file for this year's proposed Outing to King's River Cañon already exceed the number that can be accommodated. Of course, a number of these will probably change their plans or be compelled to forego the trip for one reason or another, so that there is still a chance for applicants. There will, however, be a great number of applicants who uniformly delay their applications till late in the spring who cannot possibly be taken care of.

Another matter of importance has arisen. The burden, not only of responsibility, but of actual labor placed on the management, with the increase in size of the Outing parties, has become too onerous. It is the intention this year to provide additional and more competent assistance in every department. This, together with the increased cost of provisions and equipment which has taken place during the past years, compels the taking of a step which is done with reluctance but only after careful consideration and conference with members of former Outings. The Outing deposit will be raised from $45 to $50 this year. This will enable us to increase service and perfect many details. The Outings will still afford very inexpensive vacations when one takes into consideration the character of the high mountain regions visited and the quality of the service furnished.

The Outing planned for this year to the King's River Cañon affords a most enjoyable trip from every standpoint. Main camps will be established on Bubbs Creek and in Paradise Valley, making the wonderful High Sierra region, with its picturesque lakes, crags and peaks, easily accessible.

Wm. E. Colby,
J. N. Le Conte,
E. T. Parsons,
Outing Committee.

The New Paradise Trail.

The most important trail work ever undertaken by the Club was practically completed last fall. For years the importance of a direct trail up the river, via Mist Falls, connecting the King's River Cañon with Paradise Valley, has been recognized. Though but three miles in length, for the greater part it had to be built over rough talus slopes through dense brush, and in places blasted out of solid rock. Professor J. N. Le Conte and an engineer from the Forest Service had gone over the proposed route carefully and estimated that it would cost approximately one thousand dollars to build. On account of this large expense the trail remained unbuilt for several years, in spite of the fact that the Club in its report on the King's River region, published in the Sierra Club Bulletin for January, 1907, called attention to the importance of building it. About two years ago a power company did some work on this stretch, but it was still very dangerous to travel and next to impossible to get animals over it. Last spring the Directors of the Club took the matter up and approached the Board of Supervisors of Fresno County, the Forest Service, and one of the transportation companies with the proposition that the Sierra Club would appropriate two hundred and fifty dollars toward this work provided each of these other interests would appropriate a like amount. All responded cheerfully and the one thousand dollars was raised. The actual construction was begun under the supervision of Mr. Tom Kanawyer, who contributed valuable time, tools, and powder, and the trail was practically completed last fall. A small amount of work remains to be done in the spring before travel commences, and there is a sufficient amount of the joint fund left to complete this work.

This trail will open up and make easily accessible all the wonderful High Sierra region around Woods Creek and Rae Lake and will bring Paradise Valley, with its splendid feed for animals, within two hours' travel of the King's River Cañon, where feed is so scarce.

We trust that this is only the beginning of important trail construction to follow, and we feel deeply indebted to those who so generously assisted in making the construction of the trail possible.

Wm. E. Colby,
J. N. Le Conte,
E. T. Parsons,
Special Committee on Trail Construction.

REPORT OF THE LE CONTE MEMORIAL LODGE COMMITTEE.

The Lodge enjoyed a greater vogue than ever during the summer of 1909, and is proving of great service and satisfaction to the increasing crowds resorting to the Park as a source of general and reliable information about the outlying parts of the Park. The activities and results of the season are detailed in the following report of the Custodian:

To the Le Conte Memorial Lodge Committee:

The Le Conte Memorial Lodge was opened for the season of 1909 on May 17th and closed August 19th. At that time nearly three thousand visitors had recorded their names in the Lodge register, and as the daily registration was usually about half the number who came, five thousand visitors for the summer is a conservative estimate. Many returned again and again to make use of the limited library and the maps or to rest and enjoy the Lodge. Genuine interest in the work of the Sierra Club and in the life and work of Prof. Le Conte was continually expressed, as well as pleasure in finding such a place as the Lodge in the valley.

Those books in the library pertaining to the mountains, the botanies and the books on birds were constantly in use. It would be well if duplicate copies of Mr. Muir's books, "Mountains of California" and "National Parks" could be placed on the shelves, as well as a copy of Prof. Jepson's "Flora of Western and Middle California," which is greatly needed. The following books were added to the library:

A complete set of "Appalachia" in bound volumes; five bound volumes of the Sierra Club "Bulletin;" "Mountain Wild Flowers of America," by Mrs. Henshaw; "The How and Why of the Emmanuel Movement," presented by the author, the Rev. Thomas Parker Boyd; "The Mediator," presented by Miss Anna Manning, and "The Last of the Plainsmen," presented by Mr. Alden Sampson. Mr. Charles Raas presented a photograph taken at the time of the dedication of the Lodge.

The eighteen oak chairs, gift of Mr. James Mills of Riverside, were sent to the valley in May and duly installed in the Lodge. These fine substantial chairs add much to the appearance of the interior and it is hardly necessary to say are very useful.

The herbarium, though incomplete, proves of great interest. A few specimens properly mounted and labeled were added and about a hundred and twenty-five specimens will be ready to send in with the Custodian next year. The work of collecting and pressing these flowers was done by Miss Helen D. Geis, of Los Angeles, who generously gave much of her time to the work during a month's stay in Yosemite. The thanks of the Club are due her and also Dr. H. N. Hall, of the University of California, who very kindly named the specimens collected.

In order that this collection may be most accessible and at the same time not suffer from constant handling, Mr. Alden Sampson suggested the purchase of an apparatus for holding the herbarium and generously started a subscription for that purpose; the apparatus to consist of panes of glass framed and so hung that the leaves can be turned. Thus the specimens can be seen easily and at the same time protected from dust and the wear and tear incident to handling.

The Sierra Club is greatly indebted to Major Forsyth for his unfailing kindliness and courtesy and for his very efficient assistance on many occasions; to his assistant, Mr. Sovelewski, and to Mr. and Mrs. David Curry, who, in the capacity of neighbors to the Lodge, constantly served the interests of the Club and extended many favors to the Custodian.

Respectfully submitted.

LYDIA ATTERBURY.

Since the closing of the Lodge for the season of 1909, further subscriptions have been made to the fund started by Mr. Alden Sampson to purchase a holder for the herbarium. It now stands at $18.00 and the Committee believes that about $30.00 will procure the set of holders as planned. A few additional subscriptions will enable the Committee to send it in with the Custodian for 1910.

The following books have been added to the Lodge library since the closing of last season and will go into the Lodge for the coming season:

THE WOODSMAN'S HANDBOOK, Part I	*Henry Solon Graves*
ZERMATT AND THE MATTERHORN	*Edward Whymper*
BIG TREES OF CALIFORNIA	*Galen Clark*
LIST OF PLANTS, YOSEMITE REGION	*Ora Boring*
FOREST TREES OF THE PACIFIC SLOPE	*Geo. B. Sudworth*
SCRAMBLES AMONGST THE ALPS, 1860-69	*Edward Whymper*
APPALACHIA, Vol. XI.	
SIERRA CLUB BULLETIN, Vol. VI.	

Other contributions to the Lodge library will be welcomed and sent in with those already in hand.

The maintenance of the Lodge is without doubt one of the most noteworthy and useful activities of the Sierra Club, and the Committee deems it worthy of the liveliest interest and heartiest support of every member.

Respectfully submitted,
E. T. Parsons, *Chairman,*
J. N. Le Conte,
Lydia Atterbury,
Le Conte Memorial Lodge Committee.

NOTES AND CORRESPONDENCE.

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comment and suggestion on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, fish, forests, trails, geology, botany, etc., of the mountains, will be acceptable.

The office of the Sierra Club is Room 302 Mills Building, San Francisco, where all Club members are welcome, and where all the maps, photographs, and other records of the Club are kept.

The Club would like to secure additional copies of those numbers of the SIERRA CLUB BULLETIN *which are noted on the back of the cover of this number as being out of print, and we hope any member having extra copies will send them to the Secretary.*

THE DUKE OF ABRUZZI IN THE HIMALAYA.

On July 18, 1909, the Duke of Abruzzi succeeded in getting within 200 meters of the top of Bride Peak (Conway) in the Himalaya Range. He reached an altitude of 7400-7500 meters, about 24,500 feet, but bad weather prevented reaching the summit. This appears to be a record as far as altitude is concerned.—*Note from the Alpine Journal, November, 1909.*

NEW TOPOGRAPHIC MAPS.

An administrative map of the entire Yosemite National Park and also the Mt. Goddard quadrangle, which includes the Palisade Region of the headwaters of the South and Middle Forks of the King's River, will be issued this year by the U. S. Geological Survey. These sheets will complete the topographic work covering the High Sierra. This has been a splendid piece of work and the topographic branch of the service is entitled to great credit.

TO PROTECT THE MT. RAINIER PARK.

WASHINGTON, January 3.—Senator Piles to-morrow will introduce, at the instance of the Mountaineers and Seattle Commercial Club, a bill authorizing the Secretary of the Interior to call on the Secretary of War for troops to patrol the Mount Rainier National Park.

EDITORIAL NOTE.—Members of the Sierra Club are urged to assist in having this commendable bill passed by writing to their Senators and Representatives.

KERN RIVER TRAILS.

The new Rattlesnake trail from Mineral King to Kern River was completed last fall. This trail runs from Mineral King past Lady Franklin Lake, over one divide and down to Kern River, striking the cañon between Upper and Lower Funston Meadows. The entire length of the trail is thirteen miles. Construction on a new trail connecting Redwood Meadows with the headwaters of Roaring River, which will greatly facilitate travel between the King's and Kern regions, is said to have been commenced.

MONO-TIOGA HIGHWAY.

The new State road from Mono Lake to Tioga Lake was completed last summer and is reported to be a monument to the skill of the State engineers. It has a maximum grade of seven per cent, and is a good road for automobiles. The old Tioga road, which connects the new road with Crockers and the San Joaquin Valley, should be repaired without delay, so as to afford one of the most wonderful trans-mountain trips in the world. This road runs through the Tuolumne Meadows, and when made accessible to automobiles will open up to tourist travel a park land embracing some of our finest mountain scenery.

GOLDEN TROUT.

Public-spirited citizens of Bishop, Inyo County, did some very creditable fish transplanting last fall. Several cans of golden trout were caught in Whitney (Golden Trout?) Creek and taken via Lone Pine to the headwaters of the Middle Fork of the King's River. We are just beginning to realize the importance of stocking as many lakes and streams as possible with this the most beautiful and gamy of all of our fresh-water fish. Next summer, while on our Annual Outing, we plan to transplant golden trout from the Kern to the South Fork Basin of the King's River.

KING'S RIVER, MONO LAKE, AND OTHER STATE HIGHWAYS.

SACRAMENTO, CAL., January 8, 1910.

In the connection of the King's River road, we have encountered heavy rock beneath the surface of the ground which has set us back in the progress on this job. I hope, however, to get started early in the spring and next year have the road well beyond the ten-mile crossing. We have, during the last year, opened the Mono Lake Basin road, so that it is now passable for teams going over the Tioga road to the Yosemite National Park. This coming summer we will improve this road.

During the past year we have also put the Emigrant Gap road in passable shape for vehicles. We hope to get this road in fair shape the coming summer.

I can also state for your information that we have undertaken the sprinkling of the first twelve miles on the western end of the Lake Tahoe State road and hope this summer to have this work of keeping the dust down in very good shape. On the Sonora and Mono State road, I will state that we are gradually getting this highway in fairly good shape. It has some very steep grades which cannot very well be obviated, but the past summer I traveled this road in an automobile, the first, I believe, that has gone over the Sonora Pass. However, I expect to have this road open next spring to this sort of travel.

Trusting that this bit of information may assist you in what you want, I am,
Very truly yours,
N. ELLERY,
State Engineer.

To MR. WM. E. COLBY,
San Francisco, Cal.

A NEW ARTICLE OF DIET FOR SIERRA TRAMPS.

September 2, 1909.

I wish to introduce to the tramping members of the Sierra Club, who worship the creed of "How to Go Light," a new article of diet—Swedish bread. To those who already know Swedish bread no more need be said. To those who do not, but who know Italian galetta, I will say that the Swedish bread beats the galetta.

It is made in the form of a flat disc about ten inches in diameter by about one eighth of an inch thick. It is shaped like the Jewish Passover unleaven bread—matzos,—but the Swedish bread beats the matzos from the palate's point of view about a thousand to one.

The Swedish bread has seasoning and is appetizing. It has some elasticity and is easier on the teeth than galetta. It is nourishing and self-sufficient.

The only objection to it is its shape, but when broken up it is equally grateful and chewable. It is said to retain its freshness indefinitely. There are several kinds. What I tried was the Swedish rye bread.
A MEMBER.

EDITOR'S NOTE.—Swedish bread has been in use on the Club Outings for several years. In 1909 a hundred pounds were consumed. The rye and whole wheat have been found the most satisfactory of the three varieties on sale here. The use of caraway seed makes its objectionable to some, but doubtless if a sufficient demand for it arose this seed could be eliminated.

NATIONAL PARKS AND RESERVATIONS.

(From Report of the Secretary of Interior, 1909.)

My inspection of the Yellowstone and Yosemite National Parks during the past summer convinces me that the Government should adopt a more advanced policy respecting their maintenance, improvement, and operation.

(1) A continued extension of roads, trails, and structures for public travel and convenience are required to enable the tourist to obtain the benefits of the scenic beauties of these natural playgrounds—the most wonderful in the world.

(2) These parks have ceased to be experimental as to the operation of transportation lines, hotels, and other concessions, because of the steady stream of travel frequenting them, and the large profits in most cases should require the devotion of a reasonable share thereof to the maintenance of the parks.

I have therefore determined to impose upon all the concessionaries, so far as existing contracts will permit, a franchise or use tax, based upon their gross earnings, for the enlargement of the maintenance fund, and where new leases are executed, to advance the rental and franchise charge proportionate to the privilege enjoyed. A definite system of accounting and inspection will be installed for the Government's protection in this behalf.

The system of maintaining regular troops in the Yellowstone and Yosemite parks is a highly satisfactory method of patrol. The moral effect and the saving of expense in administration alone justify their assignment.

As to the park roads, I would recommend that future appropriations for their construction and maintenance be given to this department for disbursement rather than to the War Department, thus clothing the Interior Department with their control and supervision.

In the Yosemite National Park special attention is directed to the necessity for the establishment of a permanent water and drainage system to protect the health of the tourists and campers, and those stationed in the park. A board of government experts should be selected to submit proper plans for solving this pressing problem.

It is also advisable, as this is an "all-year" park, to establish a permanent military post in the park, instead of the temporary camp maintained during the summer months. The satisfactory enforcement of park regulations can be carried out in no other way.

I would also urge that Congress authorize the acquisition of private holdings in this park of both lands and toll roads. The large private fenced areas in which cattle are grazed require constant supervision because of breaches of regulations. The private lands containing merchantable timber, if logged off, would greatly mar the beauty of the park.

None of the hotels or public convenience structures in the park are adequate for the accommodation of the tourists, or are in keeping with the scenic surroundings. They are old frame structures of the "wayside inn" type. I would favor the erection by the Government of a permanent tavern or hotel on the floor of the Yosemite Valley cañon and one at Glacier Point, to be leased for reasonable periods.

The electric plant should be condemned as unsafe and a new one installed.

As above stated, private toll roads should be extinguished, and all roads in the park placed under the control of and maintained by the Government. Extensions of road construction are important to give the public easy access to many of the natural wonders of the Yosemite and its adjacent valleys, such as the Hetch Hetchy, and Grand Cañon of the Tuolumne, and a new road is feasible and most desirable along the south crest of the valley cañon to Glacier Point.

YOSEMITE NATIONAL PARK.

(From Report of the Superintendent of the Yosemite National Park, 1909.)

Fish.—Forty thousand rainbow trout were received from the Wawona hatchery, 30,000 of which were placed in the Merced River and 10,000 in Tenaya Creek, all in Yosemite Valley. From the Sission hatchery 20 cans of Eastern brook and 12 cans of rainbow trout were received, and 12 cans of Eastern brook were placed in Lake Tenaya, the rainbow in the Merced in Yosemite Valley, and the remainder in Crescent Lake and waters in that vicinity.

Telephone Service.—The telephone service has been extended, repaired, and improved, 47 miles of line being built, and the following outposts are now in telephonic communication with the Yosemite Valley: Wawona, Mariposa Big Trees, Merced Big Trees, Crane Flats, Hog Ranch, Hetch Hetchy Valley, and Lake Eleanor. There are only three not in telephonic communication: Aspen Valley, Buck Camp, and Soda Springs, but the line will be extended to them early next season. The administration and control of the park has been much facilitated by the telephone system, which has also proved a great convenience to the public.

Roads, Trails, and Bridges.—The need of a good highway from El Portal, the terminus of the Yosemite Valley Railroad, up to the Sentinel Hotel in the Yosemite Valley, still overshadows all other needs of the park. The construction of a new Telford-macadam road from El Capitan Bridge to the Sentinel Hotel, along the south side of the Merced River, is now progressing under an allotment of $34,100, part from revenues and part from the regular appropriation, a percentage contract having been entered into with Carter & McCauley therefor. The road from El Portal to Pohono Bridge is still so rocky, dusty, narrow, tortuous, and precipitous as to make a drive over it a painful ordeal. All the roads should be widened, metalled, and watered, and in that order, though if the widening and metalling are to be indefinitely delayed it would be well to expend a few thousand dollars in watering the roads as they are.

The road from El Portal to the middle of the Yosemite Valley is about 15 miles long, half of which, when the work in progress is completed, will be a very excellent road. The other half should as soon as possible be widened, straightened, improved in grade, metalled, and watered. In addition to the above there are about 15 miles of roads on the floor of the valley that are dusty and rocky and should be rebuilt, parts of them being relocated in order to follow more scenic routes.

Visitors.—Between November 1, 1908, and April 30, 1909, there were 1,329 visitors to the Valley, and between May 1 and September 30, 1909, there were 11,853 visitors to the park, of which number 471 did not come to the valley, an aggregate of 13,182, representing an increase of 50 per cent over the previous year.

THE NEGLECT OF BEAUTY IN THE CONSERVATION MOVEMENT.

Although the declaration of the first White House Conference of Governors included a record of their agreement "that the beauty, healthfulness, and habitability of our country should be preserved and increased," it is much to be regretted that the official leaders of the conservation movement—than which nothing is more important to the country—have never shown a cordial, much less an aggressive, interest in safeguarding our great scenery, or in promoting, in general, this part of their admirable program. When the Appalachian Park reserve was first proposed, a prominent member of Congress embodied his objection to it by saying bluntly, "We are not buying scenery." To meet this criticism, the friends of the bill, instead of boldly insisting upon the value of great scenery, chose to lay stress exclusively upon the material and economic side of the whole movement. The fact is, there is no more popular and effective trumpet-call for the conservation movement than the appeal to the love of beautiful natural scenery. In this matter the idealists are more practical than the materialists, whose mistake is that they never capitalize sentiment. A money valuation of the uses of our great natural scenery, attracting, as it does, a vast number of summer sojourners and the traveling public in general, would make an astonishing showing.

It could easily be proved that the fear of offending the "hard-headed" and "practical" man by such an appeal is without foundation. The first thing that a man does after he obtains a competence is to invest his money in some form of beauty, and it is in the interest of good citizenship that he should have a plot of ground to be proud of. He settles in some town, suburb, or other region mainly because it is beautiful, and he is all the happier if his home can command an attractive natural view. As he grows richer, this desire for beautiful things, and particularly for a beautiful country-place, becomes more dominant, and it is to such a feeling that we owe the development of our sea-coast and hilltops into regions of resort for health and recreation. The American still apostrophizes his country with the lines:

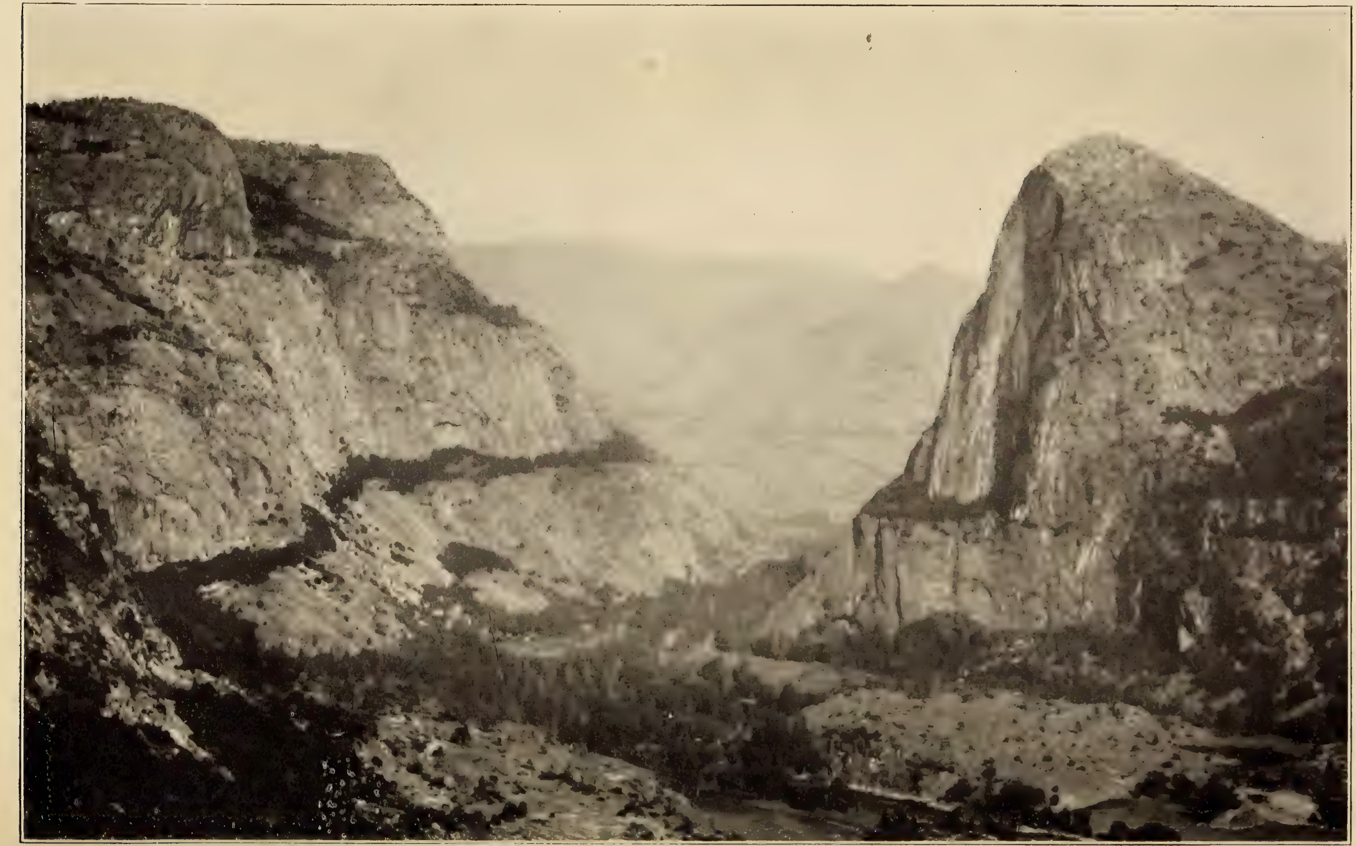
I love thy rocks and rills,
Thy woods and templed hills,

and he is not willing that this sentiment shall be changed to read:

I love thy stocks and mills,
Thy goods and crumpled bills.

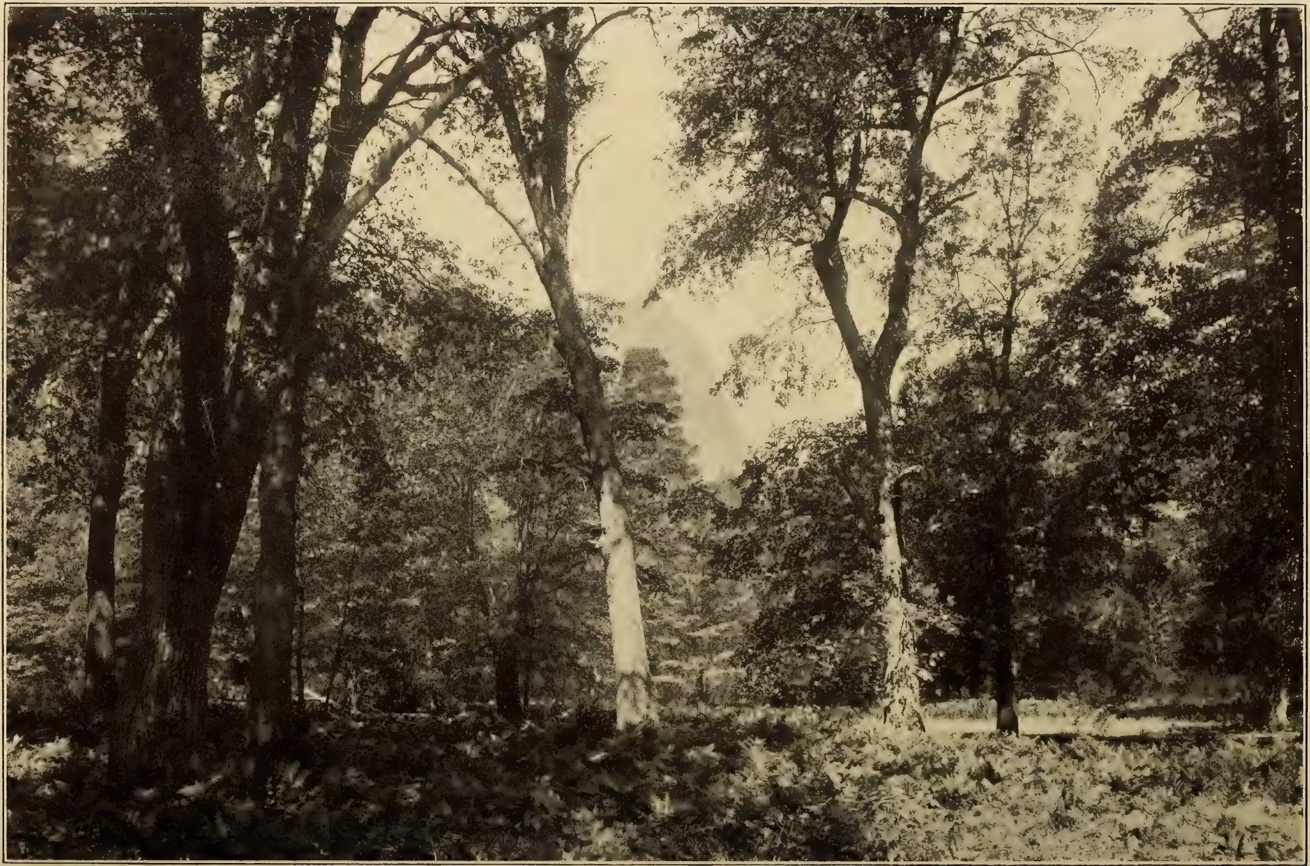
It must always be held as a blot upon the lustrous record of the Roosevelt Administration in conservation matters that, in deference to the false sense of what is practical, and moreover, by a strained construction of law, it gave away a large part of the people's greatest national park for a city's reservoir, confessedly without the slightest inquiry as to the necessity of doing so. The contention that in fact this necessity does not exist was confirmed when the leader of the scheme acknowledged before the Senate Committee on the Public Lands that San Francisco, without invading the Park, could get an abundant water-supply from a number of other regions by the simple, though sometimes inconvenient, process of paying for it!

The time has come when, if much of what has been gained by the reservation of our great natural monuments is not to be lost, the public must make known its wishes to Congress. The scheme for the dismemberment of the Yosemite National Park, which a year ago was temporarily checked, is to be pushed during the present session. In this contest the recent visit of President Taft to the Yosemite and that of the Secretary of the Interior to the Hetch Hetchy will strengthen the defenders of the latter valley, for no one can view the phenomenal beauty of these Sierra gorges without feeling a solemn responsibility for its preservation. Even the San Francisco promoters of the destructive scheme



THE HETCH HETCHY VALLEY,—"THE TUOLUMNE YOSEMITE,"—YOSEMITE NATIONAL PARK.

From photograph by J. F. Kinman.



A GLIMPSE OF THE PARK-LIKE FLOOR OF HETCH HETCHY VALLEY.

From photograph by J. N. Le Conte.

threw up their hands in admiration as they caught sight of the Hetch Hetchy, and confessed that "something was to be said for the esthetes, after all." And yet they profess to believe that water is "running to waste" if it be simply looked at! And this is said of streams which, after they have been looked at, may be utilized for the irrigation of the great San Joaquin lowlands.

Movements to safeguard Niagara and the Hudson are also impending, and in this connection we respectfully commend to Senators and Representatives, as well as to the members of the New York Legislature, these judicious words of Governor Hughes, spoken at the dedication of the Palisades Interstate Park:

"Of what avail would be the material benefits of gainful occupation, what would be the promise of prosperous communities, with wealth of products and freedom of exchange, were it not for the opportunities to cultivate the love of the beautiful? The preservation of the scenery of the Hudson is the highest duty with respect to this river imposed upon those who are the trustees of its manifold benefits. It is fortunate that means have already been taken to protect this escarpment, which is one of its finest features. The two States have joined in measures for this purpose. I hope this is only the beginning of efforts which may jointly be made by these two commonwealths to safeguard the highlands and waters, in which they are both deeply interested. The entire watershed which lies to the north should be conserved, and a policy should be instituted for such joint control as would secure adequate protection."

But it is not merely the colossal beauty of the Sierra, Niagara, and the Hudson that should be preserved and enhanced, but the beauty of city, town, and hamlet. What is needed is the inculcation, by every agency, of *beauty as a principle,* that life may be made happier and more elevating for all the generations who shall follow us, and who will love their country more devotedly the more lovable it is made.—*Editorial, Century Magazine, February, 1910.*

APPALACHIAN FORESTS.

Sooner or later the forests of the Appalachian Mountains must be taken under government control. That has been a foregone conclusion for the past ten years. It has only been a question of how soon public sentiment would be aroused to the point where it would insist upon the adoption of the principle, and so inspire Congress to action. Through the interest which has been aroused by the campaign for conserving our natural resources the people of the nation have been learning some very forcible economic truths during the past year or two. Among other things, it has become apparent that forests, and especially mountain forests, are of value, not for their timber alone, but to a far greater extent as reservoirs of water to regulate the flow of our streams.

The people of the Pacific Coast and the Rocky Mountain States were among the first to appreciate this fact, and to them has already come the benefit of government regulation of their mountain forests. Now the East has learned its lesson, too. It has awakened from its ignorance, and is eager to protect itself against the evils that it perceives to be imminent if unrestricted timber slashing continues on the headwaters of its important rivers.

This is not a matter which concerns New England and the South alone. It is a national calamity which is threatening, for if this nation is a unit, that which affects the integrity and prosperity of a substantial percentage of its area must be of consequence to the whole. Certainly it is that in no sense can this problem of conserving the Appalachian forests be regarded as a local affair. The East has cheerfully done its part to aid the West in protecting its forests and its waters. It now appeals to the West for assistance to conserve the same resources on the other side of the continent. The East is not asking something for nothing; it does not ask the nation to shoulder the whole burden, and it does not ask for special legislation devised to solve the problems of a single section.

The Eastern and Southern States must help themselves under the terms of the so-called Weeks bill if they would have the nation lend its aid. It is seldom that Congress is asked to enact a bill so thoroughly national in its scope as is this bill which has been introduced by Mr. Weeks of Massachusetts. Its terms are applicable to all portions of the country wherever streams of interstate importance rise in the midst of privately owned forests. It is not improbable that the West itself may need to invoke its powers at some future time, for not all the mountain forests in the Rockies, the Sierra, and the Cascades are included in the national reserves. Neither is it a confiscatory measure, nor one likely to discourage private enterprise. It is the mildest and the sanest piece of socialistic legislation that has been drafted in a long time. In short, it plans to furnish the minimum of government interference, and that in a way which is well calculated to stimulate private endeavor through the fostering of the very resources on which such endeavor must depend for its success.

The one feature of the Weeks bill which met with Western opposition in the last session, where it was first introduced, has been eliminated from the draft which is before the present Congress. Western members objected to the use of the proceeds of the existing national forests for the acquisition of others in the

East. That has now been changed so that a direct treasury appropriation is required to cover such part of the co-operative work as the national government may find it expedient to share. Neither need it be feared that gigantic jobbery can be promoted under this measure. The nation's interests are hedged about with formidable safeguards. Not a cent can be expended from the national purse in this work until the most careful inquiry has been made by thoroughly qualified government officials into the economic public necessities involved. The facts produced by this inquiry must be then submitted to a special board consisting of the Secretaries of Agriculture, the Interior, and War, a Senator, and a Congressman. This board must in every case pass upon the question of public necessity, and must further determine to what extent the Federal government will be justified in extending its co-operation. In short, it is an eminently safe measure, and one that should appeal powerfully to strictly national interests.

The practically solid opposition in the last Congress by the representatives from the far West was most disheartening to the promoters of the measure, despite the fact that the bill passed the House in the face of all those negative votes. Had time allowed for full discussion in the Senate, it could doubtless have passed that chamber also, but final adjournment came before the bill was reached. With the omission of what was understood to be the chief cause for Western opposition, the East hopes to see the bill adopted this year by an overwhelming majority.

ALLEN CHAMBERLAIN.

EDITOR'S NOTE.—Members of the Sierra Club are urged to write to their Senators and Representatives in Congress requesting favorable action on this bill, which means so much to our friends of the Appalachian Mountain Club as well as to the entire nation.

SIERRA CLUB PINS.

A very attractive Sierra Club pin is on sale at the office of the Secretary. The price in silver or bronze is $1.00; and in gold, either as a pin or watch-fob, $3.50. The gold pin is only made to order. Those desiring to have a pin sent by registered mail should send to the Secretary of the Sierra Club ten cents in addition to the above-mentioned price.

SIERRA CLUB STATIONERY.

The official die of the Sierra Club is now at store of Paul Elder & Co., 239 Grant Avenue, San Francisco, who are prepared to execute orders for Club stationery.

FORESTRY NOTES.

Edited by Professor William R. Dudley.

Municipal Forests. Pennsylvania, by the passage of a bill during the recent legislative session, has made possible the establishment of municipal forests adjacent to its towns and cities. The bill is entitled: "An Act to permit the acquisition of forest or other suitable lands by municipalities, for the purpose of establishing municipal forests and providing for the administration, maintenance, protection and development of such forests." The bill was presented and especially advocated by the American Civic Association, and Dr. Rothrock, the State Forester, says the State is indebted to the President of the Association more than to any other one man for its introduction and passage. Although the principle is new to America, except in sporadic cases, it has been long developed into a system in all the states of Continental Europe, where such forests are known as communal forests, and are managed with great thrift and economy, sometimes by men chosen by the communities, sometimes by the government forest service in the interest of the community. A Pennsylvania Forest Commissioner reports some instructive details from the government reports on the forests of Baden which is more richly forested than most German states. Somewhat more than one-third of Baden is forested. 577,465 acres,—less than one-half the total forested area,—are owned by communities and corporations, such as churches, schools and hospitals. Indeed, 1350 of her 1564 communities own forests, and 287 corporations, such as above named, also have woodlands to manage. The forests are systematically examined and a definite amount is allowed to be cut yearly, which is well within the yearly renewal from growth. These woodlands are a source of sure profit. The city of Baden has 10,576 acres, which yields a net profit of $6.25 an acre yearly. Freiburg owns 8,085 acres, yielding a profit of $5.79 an acre. The profits of Heidelberg are less, because Heidelberg is still acquiring forest land. Case after case could be cited where the entire public expenses of the community are met by the yearly profits on the woodlands, and some even derive a surplus sufficient after a time to build waterworks and the like. For instance, the village of Aufen, with only 220 inhabitants, owns 163 acres of woodland. "This gives 2,000 board feet of firewood to each citizen, and 85,000 board feet of timber sold nets more than $1,400, which is sufficient for all expenses of the little community." In these European communities the question of municipal ownership is so well settled there is but one side to it. In America we spend a tremendous amount of mental energy in discussing the academic question, only to arrive at the conclusion that we are not honest enough for such ownership, and it must be confessed that where municipal ownership has been put to the test it has not always developed the sense of responsibility hoped for.

CHAPMAN ON STATE FOREST POLICY.

Such a belief in the ultimate effect of responsibility upon politically elected State officers of a high rank certainly influenced the men who drew up the State forestry law of California five years ago. They showed such confidence in their belief that they left the appointment of Warden of the California Redwood Park unguarded against political interference, although the selection of State Forester was carefully protected from it. There is no question, however, but the California Board of Forestry, made up of the Governor, the Secretary of State and the Attorney-General, is essentially a political body. As executive officer the Forester is made a member of the board. Professor H. H. Chapman, of the Yale Forest School faculty, has been closely following for some years the practical working of the forest laws adopted by the various States. This subject enters into his course of instruction at Yale. He writes the results of his observations in *Conservation* for August, and touches upon the composition of forestry boards: "A progressive forest policy for a State calls for absolute freedom from political connections and for direction by men of proper training and knowledge of forestry. The experience of some States has indicated the best method of securing an efficient and non-political management of forest reserves. . . . This board should be composed of men occupying positions of responsibility in the State, in educational or technical lines; as for instance, the President of the State University, Director of State Geological Survey, Professor of Forestry in some well-known institution. Five members should make a large enough board."

This is a conclusion quite opposed to the California plan; and we regret to say that California may have furnished the author with one fact on which to base his statement, as the present Board of Forestry promptly displaced the excellent warden of the Redwood Park, trained under the first commission and under Governor Pardee's board, for a purely political appointee. This transaction has created a great amount of irritation among the frequenters of the Park and it is safe to say that it has greatly discredited the State forest policy among the people. This is very deeply regretted by many citizens who care little for personal politics of office-holders, but very much for their clean, efficient work as representatives of our republican form of government.

As it is, the record of our elected boards will not compare favorably with the management of their woodlands by the representatives of any German community or city. America is forced, according to Mr. Chapman's judgment, to turn away from officers elected by the people, to a choice carefully restricted by law to certain small classes characterized by integrity rather than business or civic training. This complete reversal of the conditions to be expected under a monarchy and under a republic would be amusing did it not bring unpleasant reflections to the republican.

The most unfortunate omission in the California law was the failure to include on its board any members who might be supposed to have especial knowledge of public parks and a love for trees. Perhaps we think of a forester as endowed with these qualities. He may have them, but his training and profession like that of an engineer do not require them. He is a forest lawyer and lumberman's adviser, furnished by the schools, with expert knowledge how to bring the greatest profit to the owner of the forest. This means inevitable destruction of tree life, but in such a manner that another crop will grow again after the lapse of many years. The purpose of the California Redwood Park, a considerable item in the management of the board, was "to preserve the species known as Sequoia sempervirens," in the words of the act of purchase, and the design of this and every public park is to meet an aesthetic desire on the part of the people and to furnish them with ground for play, rest and recuperative purposes. Pecuniary profit out of any portion of such a park is the last thing thought of. Public expenditure is expected, and profit is returned to the people through pleasure in the scene and improvement in health and contentment,—things of as much practical importance to all the people of our cities as the getting of money. To make such a park successful and satisfactory there should be an influential element on the board of management, with a sympathetic understanding of parks and their purposes, and willing to devote considerable unremunerated time to their improvement and protection.

Planting Work on National Forests in California.

The Forest Service has planned to establish a coniferous nursery on the Shasta National Forest, the capacity of which is designed to be 500,000 transplants per year. The stock produced here is to be used in experimental planting on the timber forests of the north. Approximately 5,000 pounds of sugar-pine and yellow-pine seed have been collected the past season for conducting sowing experiments. The great problem on the timber forests lies in the replacement of chaparral which has taken possession of immense areas of potential timber land following fire. In connection with the experimental work on the Shasta National Forest, experiments will be made with many of the broad-leafed species of the East for the purpose of ascertaining whether some of them can be successfully grown on certain favorable situations.

In the southern forests experiments are still being perfected for the purpose of determining the advisability of planting for watershed protection. At the same time certain areas which seem suited to growing eucalyptus are being planted up. Nurseries for the propagation of both coniferous and eucalyptus stock are located on the Angeles, Cleveland, and Santa Barbara national forests.

FIRE LOOKOUT STATIONS IN SIERRA.

Several months ago a lookout station was established on Shuteye Peak in the high Sierra for the purpose of watching for any fires which might occur in the mountains. This peak has an elevation of 8,858 feet, and the observer commands a view of a large portion of Tuolumne, Madera, and Fresno counties. A cabin was constructed at the top of the mountain and a telephone line installed which connects with the Forest Supervisor's office in the valley and the various ranger stations on the Sierra forest. The observer is equipped with powerful field glasses, and when a fire is discovered news is instantly telephoned to the nearest ranger.

During the short time the station has been maintained its usefulness has twice been demonstrated by the discovery of fires in remote localities. These were readily extinguished before they could gain dangerous headway, thus saving valuable timber and forage which might otherwise have been devastated had not the fires been discovered in their incipiency. The Forest Service is planning to establish several other similar stations in the Sierras which will virtually command the entire range of mountains, and thus largely remove the necessity for constant patrol on the part of the rangers scattered throughout the hills. Much of the rangers' time can now be devoted to trail and other improvement work without interfering with their availability for fighting fires, and the nervous strain under which many of the men labored when constantly patrolling has been materially reduced.

GOAT-GRAZING EXPERIMENTS.

A unique experiment was begun last season on the Lassen National Forest to determine whether goats could successfully subdue chaparral areas, with a view to reforesting them by planting or natural processes.

Throughout the national forests of California there are large areas of land formerly timbered which have been repeatedly burned over and which are now densely covered with brush or chaparral. A contract was entered into with a local owner of Angora goats, in which he agreed to control the grazing of the animals on certain chaparral areas within the Lassen Forest in a manner prescribed by the Forest Service, in return for which free grazing was allowed by the Forest Service.

Trails were cut across the chaparral tracts, and the goats herded along these trails, from which they would feed in either direction. The goats nibbled the bark of the manzanita and other chaparral species, in time completely girdling them. The experiment must be carried over a term of years to determine the full results, but from the observations made this season, it is confidently expected that in two or three years chaparral areas may be completely subdued in this manner. This would pave the way for natural reforestration or planting.

RANGER SCHOOL.

A school for forest rangers was held at Hot Springs during the months of September and October, one ranger from each of the seventeen national forests in the State being present, for the purpose of teaching the rangers every phase of the work which they might be called upon to perform.

About four weeks were devoted to instructions in the form of field demonstrations and lectures by representatives from the district office at San Francisco and Washington, D. C., who are in charge of the various lines of forest work.

The rangers attending showed great interest in the school, and it is felt that they got a great deal of good out of it, and the knowledge which they have thus gained will fit them for much more effective work along all lines.

It is planned to hold these field schools annually, and thus eventually fully instruct most of the permanent rangers on the forests in all phases of their work.

BOOK REVIEWS.

EDITED BY WILLIAM FREDERICK BADÈ.

PUBLIC RECREATION AND PLAYGROUND FACILITIES. The American Academy of Political and Social Science will soon publish a special volume on this topic, and all interested should write them at West Philadelphia Station, Philadelphia, for information as to terms on which it may be obtained.

E. T. P.

"THE WORLD'S HIGHEST ALTITUDES AND FIRST ASCENTS." A most readable article by Prof. Charles E. Fay (ex-president of the Appalachian Mountain Club and of the American Alpine Club), remarkably well illustrated and descriptive of the highest peaks in all parts of the world. National Geographic Magazine, June, 1909. W. E. C.

"THE MOUNTAIN TRAIL AND ITS MESSAGE." The Reverend Albert W. Palmer delivered an address in the First Congregational Church of Oakland recently under the foregoing title. To those present it was truly a message of uplift and strength, and the possessor of a copy of it in print values it highly. It was written by a man who understands to those who understand, and to quicken the perception of those who hasten heedlessly over "The Trail." E. T. P.

"A SKETCH OF THE GEOGRAPHY AND GEOLOGY OF THE HIMALAYA MOUNTAINS AND TIBET."* This book covers the tremendous field indicated by its title and furnishes the most recent and authoritative collection of data on this, as yet little known, wilderness containing the highest peaks on the globe. The work was done by Col. S. G. Burrard and H. H. Hayden and published by order of the Government of India. It is divided into four parts: Part I.—The high peaks of Asia. Part II.—The principal mountain ranges of Asia. Part III.—The rivers of the Himalaya and Tibet. Part IV.—The geology of the Himalaya. Three peaks are reported as exceeding 28,000 feet in altitude: Mt. Everest, 29,002; K^2, 28,250; Kinchinjunga I, 28,146, and 75 peaks exceed 24,000 feet. The present-day mountaineer surely cannot sigh for more worlds to conquer. W. E. C.

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*Sold at the office of the Trigonometrical Surveys, Dehra Dun, India. Price, 8 rupees.

"PEAKS AND GLACIERS OF NUN KUN."

A new book by Fanny Bullock Workman and William H. Workman, members of the American Alpine Club and the Appalachian Mountain Club, is called "Peaks and Glaciers of Nun Kun."*

The book is a record of mountaineering and pioneer exploration in the Punjab Himalya, and also gives the account of Mrs. Workman's ascent of Pinnacle Peak, 23,000 feet, which is the record ascent for women. The descriptions of the Nun Kun group of mountains, unknown before this to mountain-climbers, the account of the peculiar difficulties encountered in the ascent, not only from snow and ice and rocks, but also in handling the native porters, makes a most interesting and, at times, thrilling story.

The book contains a map and ninety-two superbly reproduced illustrations taken from photographs and showing remarkably beautiful and interesting views of the peaks, glaciers, and valleys explored.

"THE TREES OF CALIFORNIA."†

This is a book that has long been needed by the tree-loving people of California. Dr. Jepson is particularly qualified to write such a book, and has spent years of painstaking labor in its preparation. He has treated a technical subject in a most entertaining manner, and the book is replete with splendid full-page illustrations and smaller descriptive cuts. California has a reputation for "big things," but few of its own inhabitants are aware that "the silva of California is remarkable for the number of species peculiar to California or which here attain their greatest development," and that "California is most remarkable for its development of coniferæ, not only in number of species (which exceeds any other equal area), but in size of the individual trees and their forestral development. This statement is particularly true of the true pines, of which we have seventeen species." The book is intended not only for the practical forester and botanist, but also for the amateur and those "who have opportunity to take up special studies of our trees for the sake of intellectual pleasure and cultivation." The book will prove an invaluable companion to all who love our forests and mountains. W. E. C.

"HISTORY OF THE STATE OF WASHINGTON."

In his latest book Professor Meany has left the rather restricted scope of the commentator for the wider field and broader outlook of the historian. His "History of the State of

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* *Peaks and Glaciers of Nun Kun.* Illustrated maps. $4.50 net. Charles Scribner's Sons, New York, 1909.

† *The Trees of California.* By WILLIS LINN JEPSON. Cunningham, Curtiss & Welch, San Francisco. $2.50.

Washington"* is a comprehensive and interesting record of that part of Old Oregon which in 1853 became, not Columbia Territory as was first suggested, but the Territory of Washington. The book is divided into five parts, including the Period of Discovery, the Period of Exploration, of Occupation, Territorial Days, and Statehood. While the later part treating of more recent days will be of especial interest to Washingtonians, the general reader will probably find greater satisfaction in the chronicle of early days when Oregon was jointly occupied by Americans and English and the Hudson Bay Company practically dominated the situation. The story of the early explorers, of the fur traders, of the Indian wars—particularly the story of the slow-moving march of the pioneers, cannot fail to stir the reader who has Western blood in his veins, for it is a part of our great epic of the West. M. R. P.

"THE COLUMBIA RIVER."

Running water, with its unending, resistless striving towards unknown goals, has for many of us a certain mysterious allure, rivaled perhaps, among all the forces of nature, only by the tides of the sea. The child who sets his fragile play-craft adrift in the wayside gutter, the fisherman in whose ears the song of the river rings all through the city-bound months of the year, the poet who finds his inspiration in the onward rush of mighty waters—are but a few of those who confess themselves subject to its charm. And so to many readers William Denison Lyman's recent book, "The Columbia River,"† will make instant appeal. Professor Lyman has developed his theme with a sympathetic and wonderful charm. The first part of the book tells the story of the river as far as we can trace it—the legendary lore of Indian days, the early discoveries by sea and land; the days of the fur trader, the voyageur, the missionary, when the Hudson Bay Company's word was law in Old Oregon; the pioneer era and its influence in gaining Oregon for the American flag; and finally the marvelous change from the unknown, untraveled river of the wilderness to the busy highway of the alert and fruitful Inland Empire. Following this stirring narrative is a description of the whole length of the mighty river from its birthplace in the Canadian Rockies down through the beautiful lake region and the "land of wheatfield, orchard and garden," and the picturesque grandeur of its cleavage of the Cascade Range at the Dalles to the point where it slips past the historic old town of Astoria to lose

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*[*History of the State of Washington.*] By EDMOND S. MEANY. Published by the Macmillan Company, New York, 1909.

† *The Columbia River.* By WILLIAM DENISON LYMAN. G. P. Putnam's Sons, New York, 1909.

itself in the ocean. Mountain lovers will revel in the splendid photographs and take particular pleasure in the chapters describing the lakes and the snow peaks. M. R. P.

"VANCOUVER'S DISCOVERY OF PUGET SOUND."

The State of Washington is fortunate in numbering among its citizens a man whose careful and earnest research is rescuing from oblivion many interesting facts of its early history. "Vancouver's Discovery of Puget Sound,"* a recently published volume by Mr. Edmond S. Meany, professor of history at the University of Washington, is a unique compilation of the life stories of the men in whose honor so many of the geographical features of the Sound region were named. A brief review of the political situation and biographies of Captain George Vancouver and of the most prominent Spanish voyager, Don Juan Francisco de la Bodega y Quadra, introduce the reader to the scene and the principal actors; and a reprint of portions of Captain Vancouver's original diary is the vehicle chosen for the narrative of the discovery. Professor Meany, however, has added much interest to the recital by the light thrown, not only upon the principal characters, but upon every person whose name figures in the diary and upon the charts of the voyage. It is interesting to find that many of the best known features of the Northwest, Mt. Baker, Puget Sound, Whidbey Island, etc., were named for the men who suffered so many hardships and privations on the good ships "Discovery" and "Chatham," and that Vancouver honored his trusted and tried subordinates quite as often as he did the noble Lords of the Admiralty at home. Vancouver states that it was difficult to learn any fixed names that the Indians had bestowed. We may regret that the name of Kulshan, the Great White Watcher, had never come to his ears when his lieutenant, Baker, was so signally honored, but we cannot but rejoice that Lieutenant Peter Puget appeared upon the scene in time to save one of the beautiful gulfs of the world from its ancient cognomen, Whulge.
M. R. P.

"THE GRIZZLY BEAR"

Very few of the year's out-of-door books can equal Mr. William H. Wright's recent volume, "The Grizzly Bear: the Narrative of a Hunter-Naturalist,"† in interest and originality. Mr. Wright tells the story of how a quaint old book on bear hunting in California turned his thoughts as a child to this form of sport, how he was at last able to gratify his life-long ambition, and how, after many years of hunting he became "less enthralled of killing" and took to hunting his fast-vanishing quarry with a camera, in order that he might become better acquainted with its habits. The more adventurous hunt episodes will hold many readers, but probably the most original and humorous chapters are those devoted to the photographic expeditions, whose results, as exemplified in the illustrations, are of extraordinary interest and value. The third part of the book is more scientific in tone. It deals with the distribution, character, and habits of the grizzly, and is the result of long study and close observation. The volume certainly deserves a place in the front ranks of books of its kind.

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* *Vancouver's Discovery of Puget Sound.* By EDMOND S. MEANY. The Macmillan Company, publishers.

† *The Grizzly Bear.* By WILLIAM H. WRIGHT. Charles Scribner's Sons. Price, $1.50.

M. R. P.

"CAMP-FIRES ON DESERT AND LAVA."

"Camp-Fires on Desert and Lava,"* by William T. Hornaday, is a lively record of a month's trip through Southwest Arizona and across the border to Mexico. To the valuable chapters of the fauna, flora, and geological history of this hitherto unknown region, the author adds a volume of incidents from camp and trail and introduces us to a number of persons we are not likely to forget. The chapter on the Sonoyta Oasis, the solitary settlement so far removed from the turmoil of civilization that a modern disease like "nervous prostration was as impossible as happiness to an American countess," well characterizes the author's powers of observation and narration. His style is colloquial as befits his subject, but betrays the practiced hand of an experienced writer. To this he adds the further charm of humor and a happy use of epigram: "Don't visit any desert under the handicap of Indian 'guides'; they are enough to depress the spirits of a barometer! . . . After a month spent in the deserts, you will either love them or loath them. Like marriage—take them for better or worse. . . . I'm fond of dogs—in their proper place; and about nine cases out of every eight a hunter's camp is no place for them." The exploration of numerous extinct craters and the hunt for the Rocky Mountain big horn sheep give a variety of adventure that, together with the delightful narrative, keep the reader's interest on the *qui vive* throughout the tale. To fill the measures of his adventures the first ascent of Mount Pinacate is the culminating incident of the trip. The volume is beautifully illustrated. H. M. LE C.

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* *Camp-Fires on Desert and Lava.* By WILLIAM T. HORNADAY. Charles Scribner's Sons. $3.00.

"Life and Letters of Josiah Dwight Whitney."

Of special interest to Californians, and above all to lovers of the Sierra, is the "Life and Letters of Professor J. D. Whitney,"* to whose advanced and scientific methods we owe not only the fine work comprised in the publication of the "California Geological Survey," but also the inspiration for the United States Geological Survey, whose first Director, Clarence King, in reality carried out for the nation what Whitney had begun for our State. The odds against which Whitney worked in convincing an ignorant public and a corrupt legislature of the necessity and practical value of his work must be read in his own words to be appreciated. The letters dealing with his home, family, and private affairs reveal a man of original mind and habit, tenacious in carrying out his ideals of conduct at whatever cost, in material benefit to himself and to others. This sterner side of his character is offset by his tender love of home and family and by his æsthetic talent as a musician and lover of the arts.

'T is opportune, indeed, that we of the younger generation become acquainted with the arduous but intensely romantic adventures of the first explorers of the unknown Sierra, and most fitting that the name of the forceful originator of these explorations should crown the proud summit of Mt. Whitney.

H. M. Le C.

Editor's Note.—The death of Maria Whitney, a sister of Professor J. D. Whitney, and a devoted member of the Sierra Club, has just come to our notice. It was due to her that the "Life and Letters" of her brother has been published.

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* *Life and Letters of Josiah Dwight Whitney.* Edited by Edwin Tenney Brewster. Houghton, Mifflin Co., Riverside Press, Cambridge, Mass.

¶ *This publication is from the*
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All communications intended for publication by the SIERRA CLUB, and all correspondence concerning such publication, should be addressed to the Editor, Elliott McAllister, Room 302 Mills Building, San Francisco, California.

Correspondence concerning the distribution and sale of the publications of the Club with reference to advertising rates and space location, and concerning its business generally, should be addressed to the Secretary of the Sierra Club, Room 302 Mills Building, San Francisco, California.

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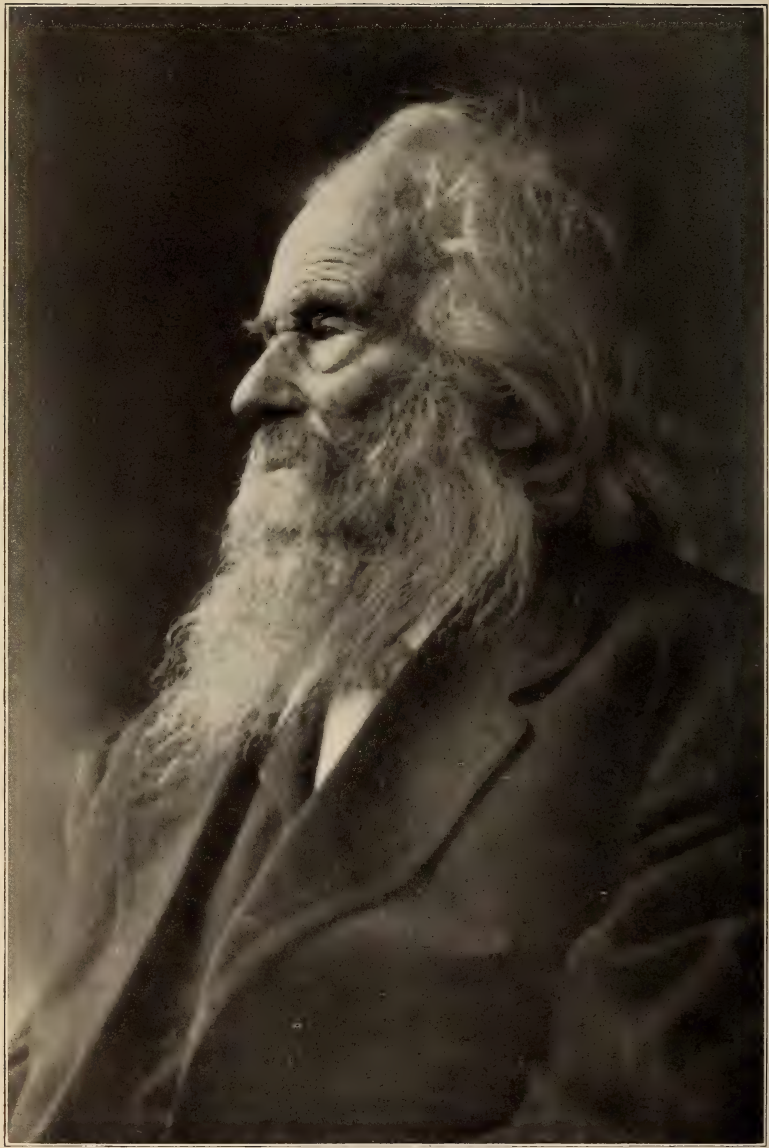

GALEN CLARK.

Aged 96.

Photograph furnished by courtesy of Pillsbury Picture Company.

SIERRA CLUB BULLETIN.

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GALEN CLARK*

BY JOHN MUIR.

Galen Clark was the best mountaineer I ever met in the Sierra, and one of the kindest and most amiable. I first met him at his Wawona ranch forty-two years ago on my first visit to Yosemite Valley. I had entered the valley with one companion by way of Coulterville and was returning by what was then known as the Mariposa Trail. The snow was still deep in the sugar-pine and silver-fir regions, obliterating not only the trails but the blazes on the trees. We had no great difficulty, however, in finding our way by the trends of the main features of the topography. Botanizing by the way, we made slow plodding progress and were again about out of provisions when we reached Clark's hospitable cabin at Wawona. He kindly furnished us with flour and a little sugar and tea, and my companion, who complained of the benumbing poverty of a strictly vegetarian diet, gladly accepted Mr. Clark's offer of a piece of a bear that had just been killed. After a short talk about bears and the forests we inquired the way to the Big Trees, pushed on up through the Wawona silver-firs and sugar-pines, and camped in the now famous Mariposa Grove. Later on, after making my home in the Yosemite Valley, I became well acquainted with Mr. Clark while he was Guardian. He was elected again and

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*Galen Clark was born in the town of Dublin, Cheshire County, New Hampshire, March 28, 1814. He died March 24th of this year, thus having reached the great age of 96. He was buried in Yosemite Valley in a grave prepared by himself.

Copyright, June, 1910, by John Muir.

again by different Boards of Commissioners to this important office on account of his efficiency and real love of the valley.

Although nearly all my mountaineering has been done alone, I had the pleasure of having Galen Clark with me on three excursions. About thirty-five years ago I invited him to accompany me on a trip through the big Tuolumne Cañon from Hetch Hetchy Valley. The cañon up to that time had not been explored, and, knowing that the difference in the elevation of the river at the upper and lower ends of the cañon amounted to about 5,000 feet, we expected to find some magnificent cataracts or falls; nor were we disappointed. It was while exploring this rough cañon that Mr. Clark's skill and endurance as a mountaineer was displayed. Before leaving Yosemite Valley for Hetch Hetchy to begin our hard trip, a Yosemite tourist, an ambitious young man, begged leave to join us. I strongly advised him not to attempt such a trip, as nothing was known of the cañon, and on account of its great depth and length it would undoubtedly prove very trying to an inexperienced climber. He assured us, however, that he was able for anything, would gladly meet every difficulty as it came, and cause no hindrance or trouble of any sort; so at last, after repeating our advice that he give up the trip, we consented to his joining us. We entered the cañon by way of Hetch Hetchy Valley, each carrying his own provisions and making his own tea, porridge, beds, etc.

In the morning of the second day out from Hetch Hetchy we came to what is now known as the Muir Gorge, and Mr. Clark without hesitation began to force a way through it, wading and jumping from one submerged slippery boulder to another through the torrent, bracing himself with a stout pole. Though then at a time of rather low water, the roar and swift surging of the current was nerve-trying. I managed to get our adventurous tourist safely through the gorge by lending a hand at the wildest places, but this experience, naturally

MUIR GORGE—GRAND CAÑON OF THE TUOLUMNE.

From photograph by Herbert W. Gleason, 1909.

CALIFORNIA FALLS—GRAND CAÑON OF THE TUOLUMNE.

From photograph by W. L. Huber, 1909.

enough, proved too much, and he informed us that he could go no further. I gathered some wood at the upper throat of the gorge, made a fire for him and advised him to feel at home and make himself comfortable, and hoped he would enjoy the songs of the water-ousels which haunted the gorge, assuring him that we would return some time that night, though it might be late, as we wished to go on through the entire cañon if possible. We pushed our way through the dense chaparral and over the earthquake taluses with such speed that we reached the foot of the upper cataract while we had still an hour or so of daylight for the return trip. It was long after dark when we reached our adventurous but nerve-shaken companion, who, of course, was anxious and lonely, not being accustomed to complete solitude. Not attempting either to return down the gorge in the dark or to climb around it, we concluded to spend the night where we were, without blankets or provisions, which we had left in the morning hung up on trees at the foot of the gorge. I remember Mr. Clark remarking that if he had his choice that night between provisions and blankets he would choose his blankets. We had a good fire and suffered nothing worth mention, although we were hungry.

The next morning in about an hour we had crossed over the ridge through which the gorge is cut, reached our provisions, made tea and had a good breakfast, and finished the preliminary exploration of about three-fourths of the cañon. As soon as we had returned to Yosemite I obtained fresh provisions, pushed off alone up to the head of Yosemite Creek basin, entered the cañon by a side cañon, and completed the exploration up to the Tuolumne Meadows.

It was on this first trip from Hetch Hetchy to the upper cataracts that I had such convincing proofs of Mr. Clark's daring and skill as a mountaineer, particularly in fording torrents and in forcing his way through thick chaparral. I found it somewhat difficult to keep up with him in dense tangled brush, though in jumping on boulder taluses and slippery cobble-beds I had no difficulty in leaving him behind.

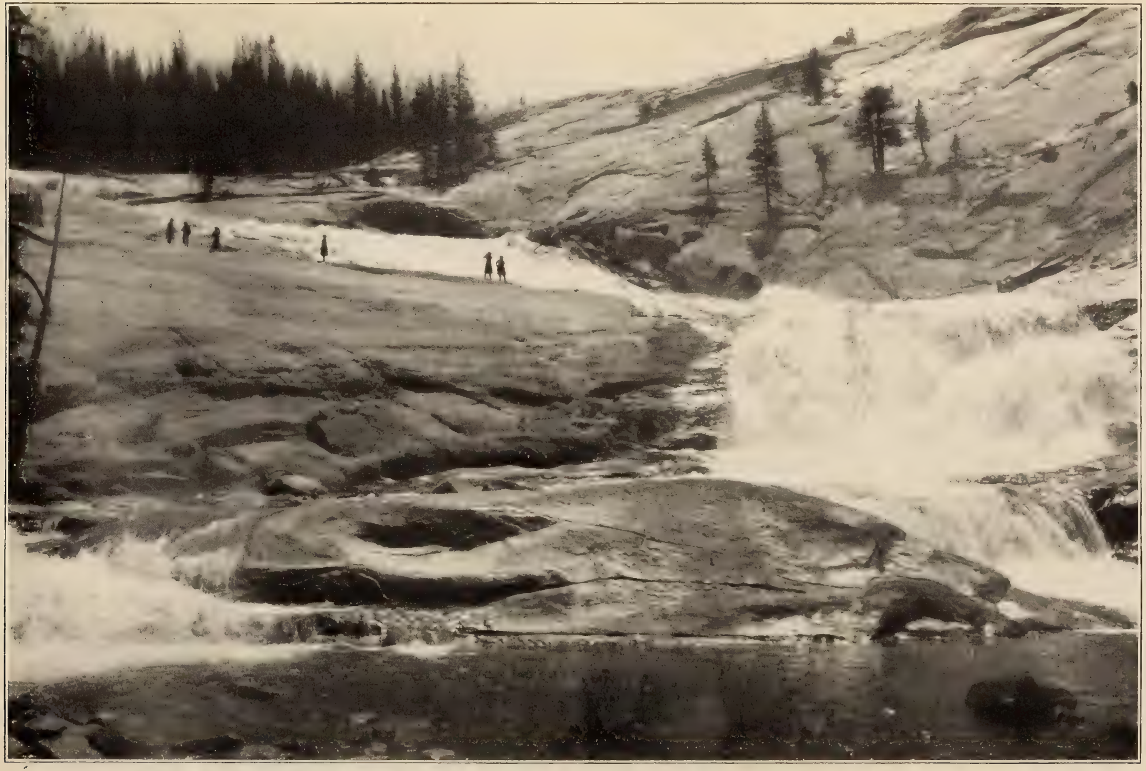
After I had discovered the glaciers on Mt. Lyell and Mt. McClure, Mr. Clark kindly made a second excursion with me to assist in establishing a line of stakes across the McClure glacier to measure its rate of flow. On this trip we also climbed Mt. Lyell together, when the snow which covered the glacier was melted into upleaning icy snow blades which were extremely difficult to cross, not being strong enough to support our weight, nor offering any level spaces between them for steps. Here, being lighter, I kept ahead of Mr. Clark, who, at each awkward fall he had, would gaze at the marvelous ranks of leaning snow blades and say: "I think I have traveled all sorts of roads and rock-piles, and through all kinds of brush and snow, but this gets me."

Mr. Clark, at my urgent request, joined my small party on a trip along the range to the Kings River Yosemite, most of the way without any trail. He joined us at the Mariposa Big Tree Grove and intended to go all the way, but finding that the time required was much greater than he expected, on account of the difficulties encountered, he turned back near the head of the north fork of the Kings River.

In cooking his mess of oat-meal porridge and making tea, his pot was always the first to boil; and I used to wonder why, with all his skill in scrambling through brush in the easiest way and preparing his meals, he was so utterly careless about his beds. He would lie down anywhere on any ground, rough or smooth, without taking pains even to remove cobbles or sharp-angled rocks protruding through the grass or gravel, saying that his old bones were as hard as the rocks.

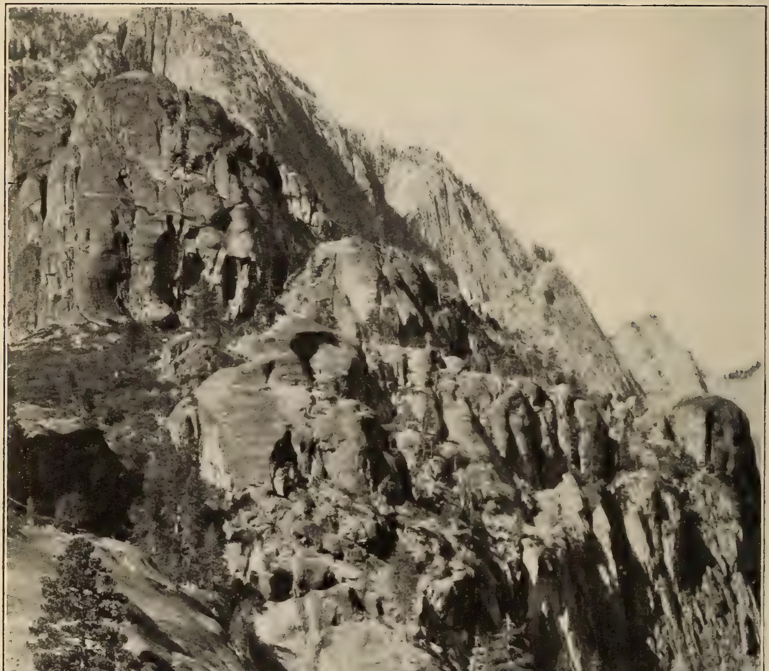
His kindness to Yosemite visitors and mountaineers was marvelously constant and uniform and brought him the sincere respect of all he met.

He was not a good business man, and in building a large hotel and barn at Wawona before the travel to



LE CONTE FALLS—GRAND CAÑON OF THE TUOLUMNE.

From photograph by Herbert W. Gleason, 1909.



CLIFFS FLUTED BY GLACIER—GRAND CAÑON OF THE TUOLUMNE.

From photograph by Herbert W. Gleason, 1909.

Yosemite had been greatly developed, he borrowed money, mortgaged his property and lost it.

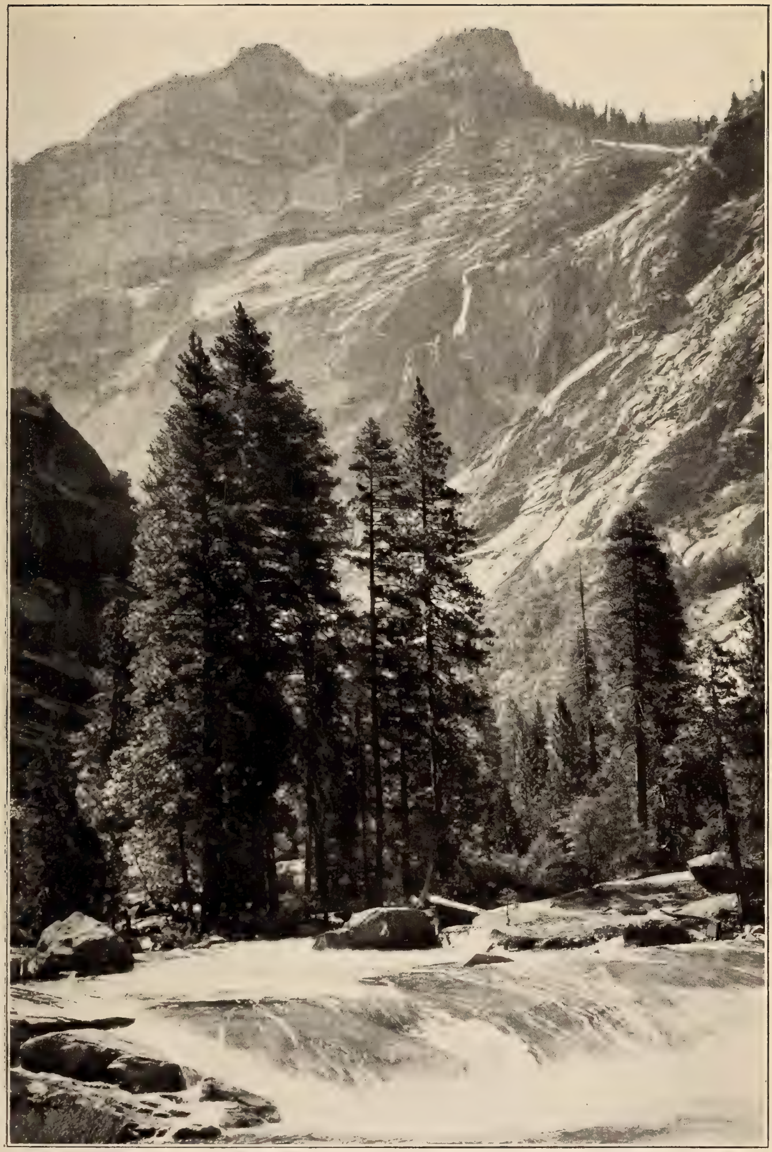
Though not the first to see the Mariposa Big Tree Grove, he was the first to explore it, after he had heard from a prospector who had passed through it that there were some wonderful big trees on the Wawona ridge, perhaps as big as the Sequoias, which had become so famous and well known in the Calaveras Grove. On this indefinite information Galen Clark told me he went up the ridge, thoroughly explored the grove and described it. In this sense he may be said to be the real discoverer of the grove. He then explored the forest to the southward and discovered the much larger Fresno Grove of about two square miles, six or seven miles distant from the Mariposa Grove. Most of the Fresno Grove, unfortunately, has been cut down and made into lumber.

Mr. Clark was truly and literally a gentle-man. I never heard him utter a single hasty angry fault-finding word. His voice was uniformly pitched at a rather low tone, perfectly even, although glances of his eyes and slight intonations of his voice oftentimes indicated that something funny or mildly sarcastic was coming, but upon the whole he was serious and industrious, and however fun-provoking a story might be he never indulged in loud, boisterous laughter.

He was very fond of scenery and often told me that he liked "nothing in the world better than climbing to the top of a high ridge or mountain and looking off." But above all, he preferred the mountain ridges and domes in the Yosemite region on account of their noble grandeur and the glorious beauty of the falls and forests about them. Oftentimes he would take his rifle, a few pounds of bacon, a few pounds of flour and a single blanket and go off hunting, for no other reason than to explore and get acquainted with the most beautiful points of view within a journey of a week or two from his Wawona home. On these trips he was always alone and could indulge in tranquil enjoyment of Nature to his heart's content. He said that on those trips, when he was at a convenient distance from home in a neighborhood where he wished to linger, he always shot a deer, and, after eating a considerable part of it, loaded himself with the balance of the meat on his way home. In this way his cabin was always well supplied with venison, and occasionally with bear-meat and grouse, and no weary traveler ever went away from it hungry.

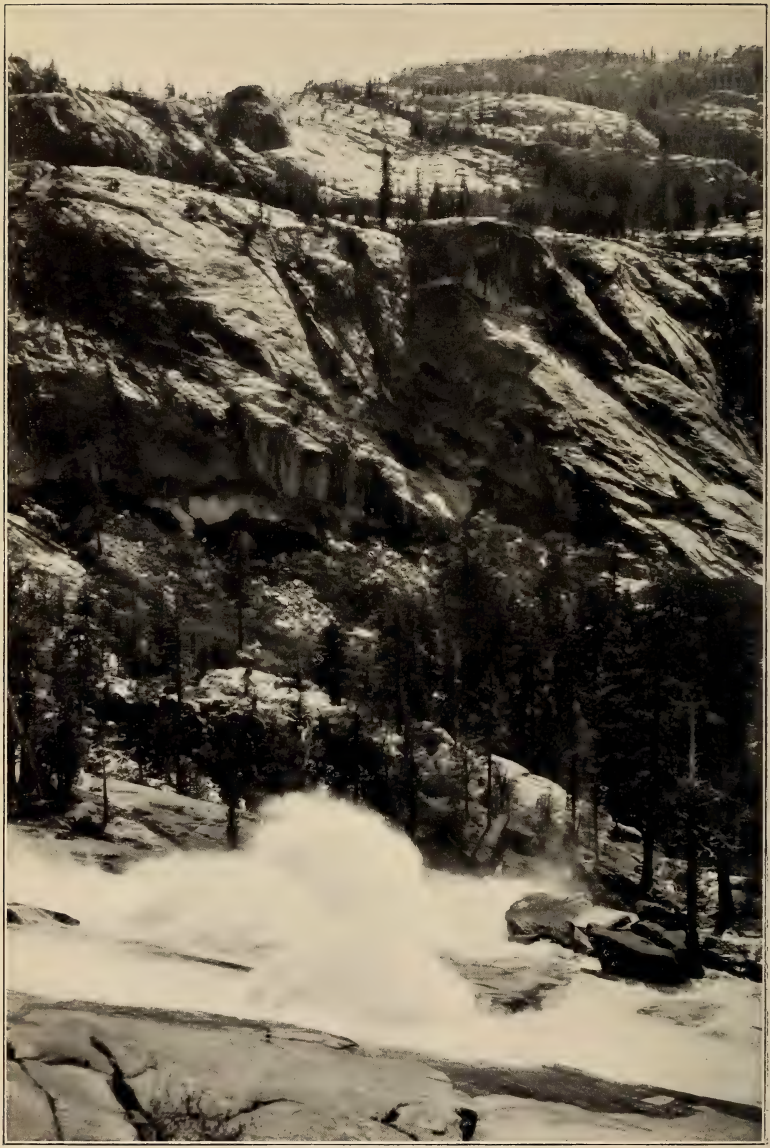
The value of mountain air in prolonging life is well exemplified in the case of Mr. Clark, who, while working in mines, had contracted a severe cold that settled on his lungs and finally caused severe inflammation and bleeding. None of his friends thought he would ever recover, for the physicians told him he had but a short time to live. It was then that he repaired to the beautiful sugar-pine woods at Wawona and took up a claim, including the fine meadows there, built his cabin and began his life of wandering and exploring in the adjacent neighborhood, usually going bareheaded. In a remarkably short time his lungs were healed.

He was one of the most sincere tree lovers I ever knew. About twenty years before his death he made choice of a plat in the Yosemite cemetery on the north side of the valley, not far from the Yosemite Fall, and selecting a dozen or so of seedling Sequoias in the Mariposa Grove he brought them to the valley and planted them around the ground he had chosen for his grave. The soil there is gravelly and dry, but by careful watering he finally nursed most of them into good, thrifty, hopeful saplings that doubtless will long shade the grave of their friend and lover.



CLIFFS OF THE GRAND CAÑON OF THE TUOLUMNE.

From photograph by Herbert W. Gleason, 1909.



WATER WHEELS (20 TO 30 FT. HIGH) IN ONE OF THE CATARACTS OF THE GRAND CAÑON OF THE TUOLUMNE.

From photograph by Herbert W. Gleason, 1909.

THE GRAND CAÑON OF THE TUOLUMNE

By Herbert W. Gleason.

I consider the Grand Cañon of the Tuolumne one of the finest displays of scenic grandeur within the limits of the United States. I have spent a month in Alaska, twice visited the Grand Cañon of Arizona, twice toured Yellowstone Park, spent six summers in the Canadian Rockies, and three summers on the Pacific Coast,—in fact, I have seen most of the notable scenery of the American continent,— and I unhesitatingly affirm that the Grand Cañon of the Tuolumne River deserves to rank, in its sublime impressiveness, stupendous majesty, and rugged beauty, with anything that this country affords. The Grand Cañon of the Colorado is, of course, superior in its vast extent and its brilliant coloring; yet the Tuolumne Cañon, by reason of the fact that its perpendicular walls, 4,500 to 5,000 feet in height, are as a rule less than a mile apart at their base, while the walls of the Colorado Cañon are from ten to fifteen miles apart, produces a sense of overwhelming grandeur which not even the great Arizona Cañon can give. Through the length of the cañon for twenty miles flows the Tuolumne River in a constant succession of magnificent waterfalls and cascades, some of which, though not as lofty, are more uniquely beautiful than the famous falls of the Yosemite Valley.

LITTLE STUDIES IN THE YOSEMITE VALLEY*

By Francois E. Matthes.

I. The Extinct Eagle Peak Falls.

At one time in its history the Yosemite Valley boasted one more great waterfall than it does today—or, to be more accurate, a group of falls. A sheer 1,500 feet they plunged, like a cluster of Yosemite Falls coming down together, mingling their spray. No human being was privileged to behold them, it is safe to say, for it was only during glacial times that they existed, at a period when the Yosemite Valley was filled with ice to a depth of some 2,000 feet, and even the little upland valleys tributary to it were smothered under glaciers of considerable size. Only the upper portion of the falls was visible, most likely, while their foot must have been deeply ensconced below the surface of the Yosemite glacier, in a chasm of their own fashioning, between ice and valley wall.

But, it may be asked, if there was no human witness how do we know that this picture is correct? What evidence have we of the existence of the falls, of their location or of the glacial character of their setting?

It is a well-known characteristic of waterfalls that they cut back the cliffs over which they plunge. Both cliff and fall thus ever tend to retreat, and the rate of retrogression may under favorable conditions be rapid enough to be appreciable even in a few short years, as in the classic case of the Niagara Falls.

A waterfall leaping over the side of a steep-walled trough like the Yosemite Valley will therefore in time produce an embayment in the same, a recess breaking into the alignment of the cliffs. An excellent example on a modest scale is that of the deep cove of the tiny Sentinel Fall, not far west of Sentinel Rock. Its real nature is perhaps best appreciated from a study of the new Geological Survey map of the Yosemite Valley. The contours, it will be seen, draw in abruptly at this re-entrant, a full quarter mile back from the regular valley side. Having accustomed the eye to the meaning of this feature, now glance across to the north side of the valley, to the place where the Yosemite Falls Trail begins its ascent. Its first flight of kinky zigzags leads up into an embayment or amphitheater with precipitous walls, almost horseshoe-shaped in plan. It is perhaps not so accentuated as the Sentinel Fall recess, but it is of ampler, grander proportions. The debris slope over which the trail ascends, it should be noted further, is of exactly the same nature as that at the foot of the Sentinel Fall. But, while these features alone would seem to suggest a fall-site, still, there is need of corroborative evidence of another sort, namely, some trace of a former stream channel above the cliff. And therein are we not disappointed: the channel, or group of channels, through which the water made its approach, are very much in evidence. Each one of them is carved in solid rock and may be readily followed on the ground to the very spot where its stream plunged over. The strongest lead to the head of the amphitheater, while the lesser ones cascade down the rock slopes nearby, only to enter the horseshoe lower down. There is no shadow of a doubt, then, in the light of this topographic evidence, that we have to do here with the site of an extinct group of falls.

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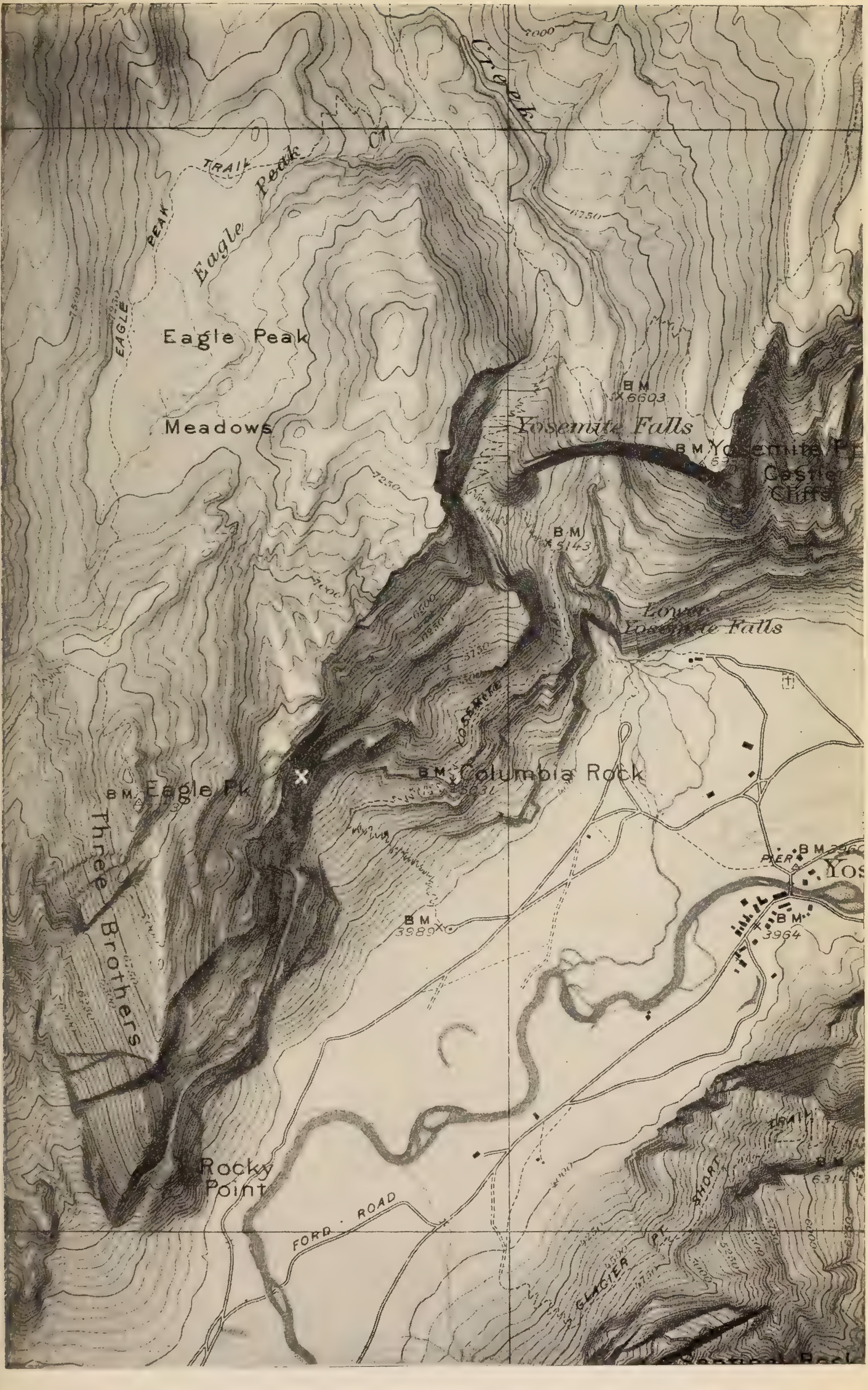
Whence, however, came the streams that fed the falls? Following the channels upward we find them to be quite short, heading against the ridge that extends from Eagle Peak eastward and connects with the shapeless, timbered height sometimes called Eagle Tower. The principal ones come directly from the low pass in the middle of the ridge. There is no source of water here today—the place is dry and barren; but in the days of the ice reign this was all quite different. The basin of the Eagle Peak Meadows was then filled with ice to a depth of several hundred feet. Strangely, too, the ice mass moved up the basin, or toward Eagle Peak. It was a lobe of the much mightier glacier that came down the valley of Yosemite Creek. That ice stream when at its highest, split upon the Eagle Tower and sent a portion of its volume up into this cul-de-sac. Indeed, it is this glacial occupancy that is responsible for the existence of the swampy Eagle Peak Meadows—they represent ground moraines overgrown with peat. Many high meadows in the Yosemite region are of similar origin.

The Eagle Peak lobe, apparently, breasted at times against the ridge described, as the occasional glacial cobbles on the same attest. From various places along its front, then, but especially through the central gap, it sent forth the streams that carved the channels to the fall-site. Judging by the size of the channels each of the streams may have equalled Yosemite Creek in volume.

How long these conditions lasted can only be conjectured at the best. They obtained only during the earlier ice advances, which were far more extensive in the High Sierra than the later ones. During the latter the glacier in the valley of Yosemite Creek did not rise high enough to send a lobe up into the Eagle Peak Meadows; instead it threw up lateral moraines across the mouth of that basin—the awkward boulder ridges among which the Eagle Peak trail now turns and twists.

Whether the Eagle Peak Falls were long-lived or not is, therefore, an indeterminate problem; but, whatever their period of activity may have been, this much is certain, that they were able while they lasted to cut back the wall of the Yosemite trough by a thousand feet or more, leaving a profound embayment that has endured to this day.


Creek
Eagle Peak Cr
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B M Yosemite P
Castle Cliffs
B M 5143
Lower Yosemite Falls
YOSEMITE
B M Columbia Rock
B M Eagle Pk
Three Brothers
B M 3989
PIER
B M
Yos
B M 3964
Rocky Point
FORD ROAD
TRAIL
SHORT
PT
GLACIER
B M 6314
7000
6750
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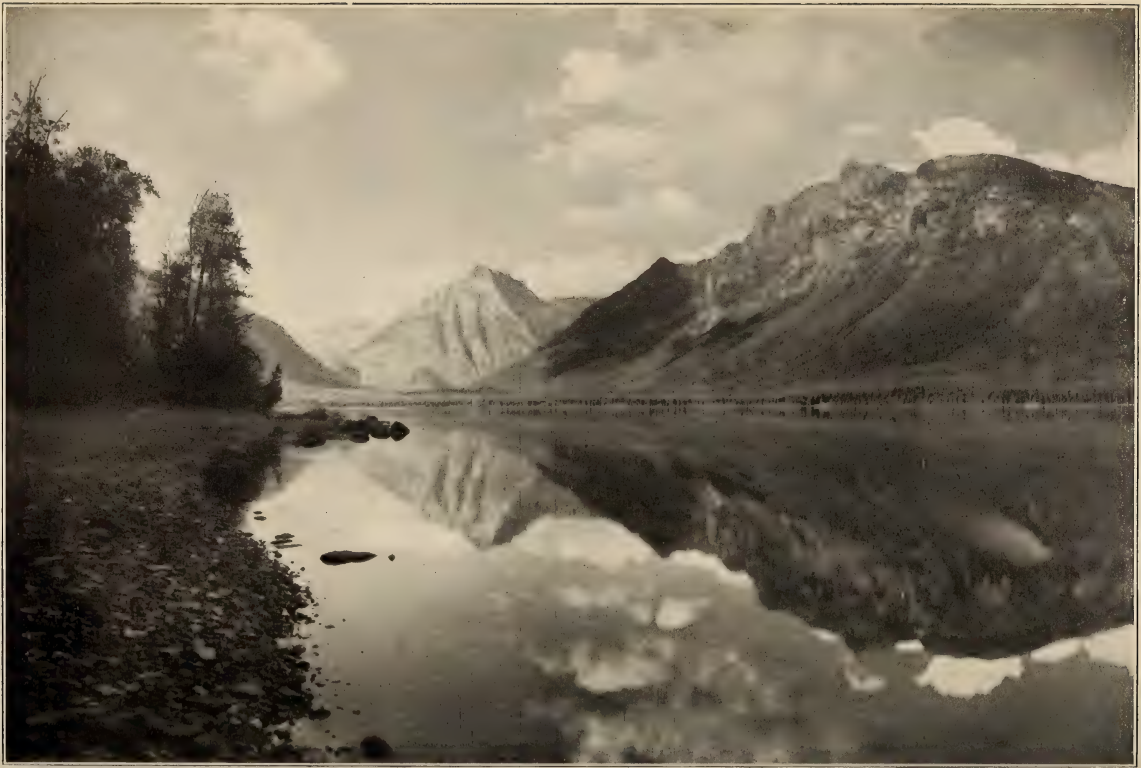
TOPOGRAPHIC MAP ILLUSTRATING THE SITE OF THE EAGLE PEAK FALLS.

(The White Cross marks the Site.)

By courtesy of the U. S. Geological Survey.



LAKE McDONALD—GLACIER NATIONAL PARK.

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THE NEW GLACIER NATIONAL PARK*

[The bill to establish the Glacier National Park in the Rocky Mountains south of the international boundary line, in the State of Montana, has just been passed by Congress and signed by the President. The following speech was made by Senator Carter of Montana when the bill was being considered by the Senate:]

Mr. President, upon the general policy of public parks I am sure there can be but one opinion. Public parks in the cities of the country are a benediction to the people residing in densely settled districts. The national parks of the United States are all too few in number for the pleasure and accommodation of the people of the United States.

No one who has ever visited the Yellowstone National Park can fail to realize that it would have been a public calamity to have permitted that wonderland to have passed into private ownership. Thousands of people visit that park from all portions of this country and from nearly all parts of the world every year. It is a source of pride to the American people. It is a pleasure ground which will grow in favor as the years go by.

The section which it is proposed by the bill to establish as a park is entirely different from the Yellowstone National Park in many respects. The park embraces an area of about 1,400 square miles. It is between 30 and 40 miles in width and about 50 miles in length. For boldness of scenery, for the beauty of the lakes and the waterfalls, and for the remarkable glacial deposits eternally resting there, it is distinctly unique in all the world's remarkable scenery. There are 16 living glaciers within the limits of this proposed park.

The construction of wagon roads will probably not be resorted to in this park to any considerable extent. It is an extremely rugged country. Cliffs rising thousands of feet perpendicularly, great waterfalls, glaciers, forests, and all that go to make bold and unique scenery can be reached best over ordinary horse trails. It would be exceedingly difficult to construct wagon roads through the greater portion of the park. There will be a railroad immediately to the west of it. There is one to the south of it now. There will be one or two entrances from each of these roads, and at these respective entrances persons, I suppose, will in the future be able to obtain pack animals and saddle horses with which to make tours of inspection through that rugged and wonderful country.

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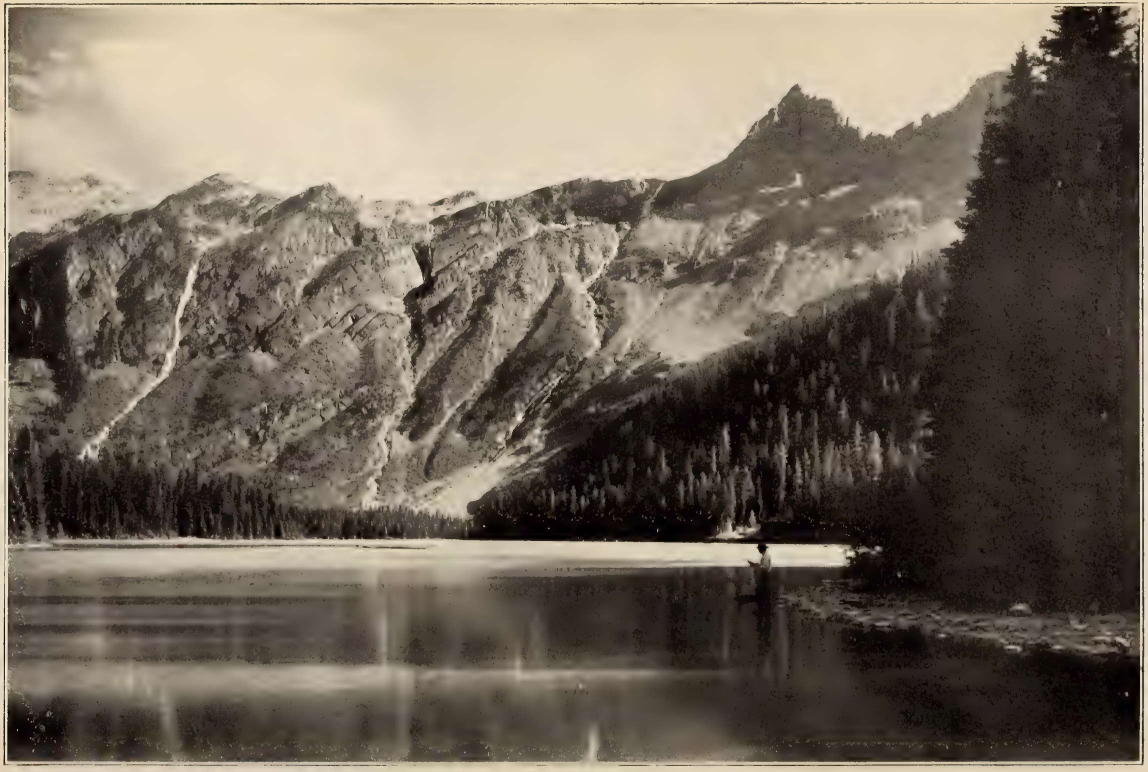
* For further information concerning this park see article by Guy Elliott Mitchell in *The National Geographic Magazine* for March, 1910.

The Canadian government has in contemplation the addition of a like area to the north of the line, this being with a view to providing a refuge for the wild game which now abounds, but which will not long continue in that open and unprotected region.

I think this park contains the last distinct habitat of the mountain sheep within the limits of the United States. A senator who has visited the place recently spoke of ascending one of the pinnacles or cliffs and observing the mountain sheep going down to an ancient lick, where salt oozed out of the side of the cliff. He said that these sheep had been traveling down that mountain cliff until they had worn pathways through the solid rock along the trail, and that sometimes these gashes in the rocks reached as deep as two feet. Through all the centuries those interesting animals have been visiting that spot. It is surely desirable that this last retreat of this rare class of animals should be preserved in some manner from invasion, so as to avert extermination.

Mountain goats abound there also; and it is believed that it would be well to set apart this limited patch of ground in all the vast extent of the Rocky Mountains where these animals can repair in peace to abide and propagate their kind and prevent the extinction of that species.

Congress will not be extravagant, Mr. President, in making appropriations for building trails, but Congress



AVALANCHE LAKE—GLACIER NATIONAL PARK.

By Courtesy of the Kiser Photo Company.

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"GLACIERS, FORESTS AND ALL THAT GO TO MAKE BOLD AND UNIQUE SCENERY."

By Courtesy of the Kiser Photo Company.

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for Great Northern Railway.

will in time, and without fail, respond to a demand from the people to make accessible such remarkable scenic wonders as are to be found in that locality alone.

Two hundred million dollars of the good money of the people of the United States are paid out annually by Americans who visit the mountains of Switzerland and other parts of Europe. I would that our people might direct their course to our own grand mountains, where scenery equal to that to be found anywhere on this globe may be seen and enjoyed.

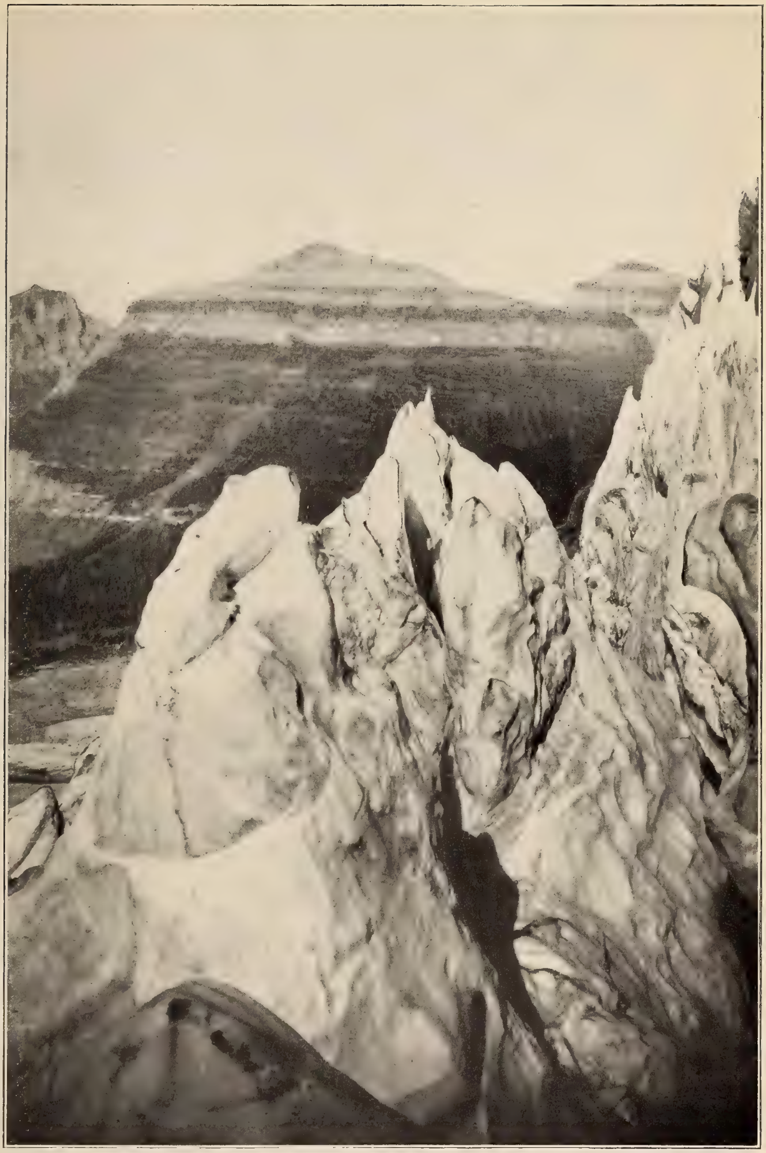
The time will come, Mr. President, when our successors here will thank us for having taken appropriate action in due season to preserve from vandalism and invasion the few remaining places of striking grandeur and interest belonging to the Government on this continent.

AN ACT TO ESTABLISH "THE GLACIER NATIONAL PARK" IN THE ROCKY MOUNTAINS SOUTH OF THE INTERNATIONAL BOUNDARY LINE, IN THE STATE OF MONTANA, AND FOR OTHER PURPOSES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the tract of land in the State of Montana particularly described by metes and bounds as follows, to wit: Commencing at a point on the international boundary between the United States and the Dominion of Canada at the middle of the Flathead River; thence following southerly along and with the middle of the Flathead River to its confluence with the Middle Fork of the Flathead River; thence following the north bank of said Middle Fork of the Flathead River to where it is crossed by the north boundary of the right of way of the Great Northern Railroad; thence following the said right of way to where it intersects the west boundary of the Blackfeet Indian Reservation; thence northerly along said west boundary to its intersection with the international boundary; thence along said international boundary to the place of beginning, is hereby reserved and withdrawn from settlement, occupancy, or disposal under the laws of the United States, and dedicated and set apart as a public park or pleasure ground for the benefit and enjoyment of the people of the United States under the name of "The Glacier National Park"; and all persons who shall locate or settle upon or occupy the same, or any part thereof, except as hereinafter provided, shall be considered trespassers and removed therefrom: *Provided,* That nothing herein contained shall affect any valid existing claim, location, or entry under the land laws of the United States or the rights of any such claimant, locator, or entryman to the full use and enjoyment of his land: *Provided further,* That rights of way through the valleys of the North and Middle forks of the Flathead River for steam or electric railways may be acquired within said Glacier National Park under filings or proceedings heretofore or hereafter made or instituted under the laws applicable to the acquisition of such rights over or upon the unappropriated public domain of the United States, and that the United States Reclamation Service may enter upon and utilize for flowage or other purposes any area within said park which may be necessary for the development and maintenance of a government reclamation project: *And provided further,* That no lands within the limits of said park hereby created belonging to or claimed by any railroad or other corporation now having or claiming the right of indemnity selection by virtue of any law or contract whatsoever shall be used as a basis for indemnity selection in any State or Territory whatsoever for any loss sustained by reason of the creation of said park.

Section 2. That said park shall be under the exclusive control of the Secretary of the Interior, whose duty it shall be, as soon as practicable, to make and publish such rules and regulations not inconsistent with the laws of the United States as he may deem necessary or proper for the care, protection, management, and improvement of the same, which regulations shall provide for the preservation of the park in a state of nature so far as is consistent with the purposes of this Act, and for the care and protection of the fish and game within the boundaries thereof. Said Secretary may, in his discretion, execute leases to parcels of ground not exceeding ten acres in extent at any one place to any one person or company, for not to exceed twenty years, when such ground is necessary for the erection of buildings for the accommodation of visitors, and to parcels of ground not exceeding one acre in extent and for not to exceed twenty years to persons who have heretofore erected or whom he may hereafter authorize to erect summer homes or cottages; he may also sell and permit the removal of such matured, or dead or down timber as he may deem necessary or advisable for the protection or improvement of the park.

Approved, May 11, 1910.



BLACKFOOT GLACIER—GLACIER NATIONAL PARK.

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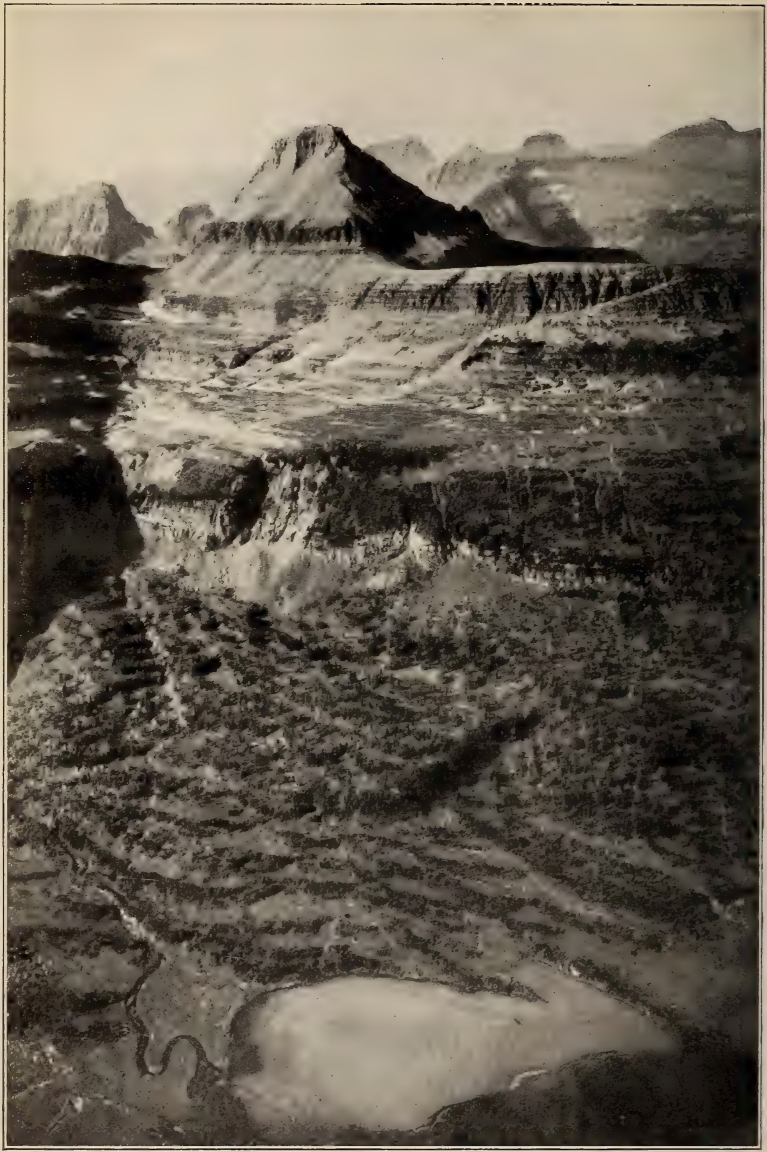

BEAUTIFUL LAKES NESTLE IN BASINS HOLLOWED OUT BY PREHISTORIC GLACIERS.

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ANOTHER VIEW OF LAKE McDONALD.

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MT. FUJIYAMA—JAPAN.

THE ASCENT OF FUJIYAMA

By Lena Martha Redington.

If one is fortunate enough, the first view of Fuji-san, as the mountain is more commonly called by the Japanese, is from the ship as one sails into Yokohama Bay. Very early in the morning the deck is crowded with expectant tourists, even before it is quite light. They watch in the direction where they think it should be. They ask information from a Japanese passenger. And there, higher, much higher than they had thought to look, in the pink dawn floats the pale, snowy cone of the great summit. The base is forever hidden from view by fleeting blue mists and yellow hazes.

At Miyanoshita is to be found the very best hotel in all Japan. There one can sojourn for a week or so, enjoying the pretty walks in every direction. A week on the soft slopes of the surrounding hills puts one in better condition for mountain climbing than the three preceding weeks on the hard, level deck of a large ocean liner. Almost every walk leads to a dainty tea-house, where one rests in the toy landscape garden of fountains, lakes and flowers. Though tea has been served but ten minutes before where one stopped to enjoy the view, it is impossible to resist the low bow and the attracting smile as the dainty tray is extended. Every tea-house is so arranged that Fuji-san is sure to be in view if the atmosphere permits—the same ghostly, delusive Fuji that one sees on each tray, cup, screen and kakemono of Japanese fabrication. But unfortunately a perfectly cloudless view is not always to be relied upon in mid-summer. It is interesting to watch the curtain of clouds rise and fall until an uncontrollable desire to climb that mountain obsesses one.

The little village of Gotemba is ten miles distant from Miyanoshita. The way leads first along a roaring river, then up the steep ascent of the Otome-toga, or Maiden's Pass, with its wonderful view, and down into the fertile plain of rice fields in which Gotemba is situated. Frequently the night is passed in Gotemba, but if there is still time it is better to go on to Subashiri, five miles nearer the base of the mountain. These five miles can be taken by means of a little tramway. Some misfortune had happened to our schedule, so that two cars found themselves face to face on the same track. It is not an inconvenience that everything in Japan is so tiny. It was finally decided to set one car off the track, lay it over on its side and let the other pass. Everybody helped; everybody laughed, and the work was quickly accomplished.

At Subashiri there is the pleasure of trying a real Japanese inn, for there is not a European one in the village. Both Gotemba and Subashiri are gay with flapping banners, bearing inscriptions in Japanese. It seems that this is the way of advertising the inn. A flag reads that Mr. So-and-so stayed at this inn and found it very comfortable. As every Japanese man is supposed to climb the sacred mountain at least once in his life to pray at the altar of the sun, it may be readily imagined that the breezes of these two villages, as well as of those on the Yoshida side of the mountain, waft to the approaching traveler a good impression of the inns. Boots must be taken off before the inn can be entered. A hot bath is offered, including a clean kimono to put on afterwards, and then a good supper of soup, fish, rice, eggs, and hot milk is brought up to one's room, where one eats, seated on the floor. A dear, laughing little butterfly also seats herself on the floor in case anything should be wanted from the kitchen. Later she spreads the heavy bedding on the floor, for, of course, there are no beds.

On the second morning the start is made before dawn. The first seven miles are usually made on horseback, as there is a rise of about 2,000 feet through very loose cinders. The last part of the horseback ride is through a fragrant wood of maples, birches and dog-woods, with hazels and ferns and grasses for lower growth. At the edge of the timber line is an inn with a chapel attached—the chapel of Ko-mitake. Here staves are sold, with the white towel that is to be tied about the forehead, knotted picturesquely in back. The towel bears a sacred inscription. All pilgrims making the ascent for the first time wear white clothes and tinkling little bells.

Then begins the long, slow, easy climb. Soon all plants have disappeared, leaving nothing but the loose, gray, volcanic rocks. There is nothing at all difficult about the climb of Fuji-san. It is only its great length that makes it unattractive to most people—12,600 feet rising at one slope from the level of the sea. Subashiri is about 3,000 feet high. To break the route on the east side, the Subashiri side, there are nine rest-houses, built in the very sides of the mountain and commanding excellent views in varying stages of *déchéance.* At each station the staff must be marked with the stamp of the station. Tea and cake are offered. One is welcome to pass the night there if one is too tired to proceed or if the weather becomes unfavorable. In fact rest-house No. 8 is a large inn where many people prefer to remain over night, as it is more protected from the cold, howling wind. The only really steep, hard portion of the climb is up the lava dykes which are between stations 8 and 9—not a very attractive prospect if one begins to feel jaded. But we had decided to sleep in the inn on top. At number 9 is a tiny temple through which one must pass—Makai-Sengen, "Goddess of Fuji's Welcome." Station number 10 is the inn on the summit.

It was not too late that same afternoon for us to make the tour of the deep crater, two and one-half miles around and two thousand feet across. The ground has a hollow resonant sound as one walks. Ladders must be used occasionally in case of sheer walls. There are fumes everywhere, blue and yellow steam, which render it necessary to walk very fast in certain directions. On the west side of the cone are the temple, the sacred well, and the post office, for there is a large colony of priests and curio-sellers, who inhabit the stone huts during the months of July and August. On this particular evening there were many clouds, in fact we had had, more or less, all day that sensation of being in a balloon above a sea of fleece —broken at various intervals to permit glimpses of sea, lakes, hills and farm lands. Now in the late afternoon we were entirely closed in by the fleecy white clouds far below us on which Fuji cast its black triangle of shadow. Gradually the clouds became flushed with pale vapory colors, giving way to ruddier, tawnier tones, almost fierce in their black bronze effects. It was night; clear, cold and windy.

The summit inn is extremely rude but strong, as it must be, for the wild storms that so often visit the mountain. It consists of one large room,—curtained to make two if ladies are present—in which are to be found braziers of charcoal for heating, and steaming pots of soup, and of water for the never-failing tea. Again boots must come off before walking on the very clean matting.

The sunrise the following morning was the richest, gayest one I have ever seen—rose and yellow intermingled at first with a white mist. Then as the great sun came above the horizon, all was crimson and orange. The few pale stars which were left faded away. For a short space of time there was that great silence which comes with a climax. The heart beats loud with joy. Pilgrims were kneeling at prayer. But soon the whole mountain was ringing with little silver bells, while everywhere came the happy voices of the white-robed worshippers. As we moved downwards they were coming up from the inn at Refuge No. 8, to pass the day on top, and to sleep again a second night with the monks at No. 8.

A different route is chosen for the descent, a steeper one through soft cinders, by means of which one can make long, rapid strides to the base. A few rests suffice on the downward way, rests necessary for the guides and porters to change their straw *wariji.* It would be impossible to miss the way down, for the entire path is strewn with these cast-off straw sandals. We reached Subashiri in time for a later breakfast and walked on back to Miyanoshita all the same day, two nights and three days having been taken for the trip.

THE PROPOSED ESTES NATIONAL PARK

By Enos A. Mills.

Estes Park, Colorado, and its scenic surroundings has been named as a place well worthy of being perpetuated as a national playground and is before the public as the proposed Estes National Park and Game Preserve. The scenery of this splendid hanging wild garden, its climate, accessibility, and the perishable nature of many of its attractions, all tell that its resources should be used and perpetuated in a National Park.

One corner of the proposed park is only fifty miles from Denver, and the area named for it measures forty-two miles east and west by twenty-four miles north and south. The greater portion of the region lies above the altitude of 7,000 feet, and in it is the great Long's Peak, and, says Hayden, "one of the most rugged sections of the Continental Divide of the Rocky Mountains." Within the boundary proposed also is the Mummy Range, together with short sections of the Rabbit Ear and the Medicine Bow ranges.

Standing within the proposed area are eighteen peaks that rise above the altitude of 13,000 feet, the highest being Long's Peak, which rises 14,259 feet above the tides. There are numerous short, deep, rugged cañons; the longest, most poetical and best known of these is the Big Thompson and the North St. Vrain.

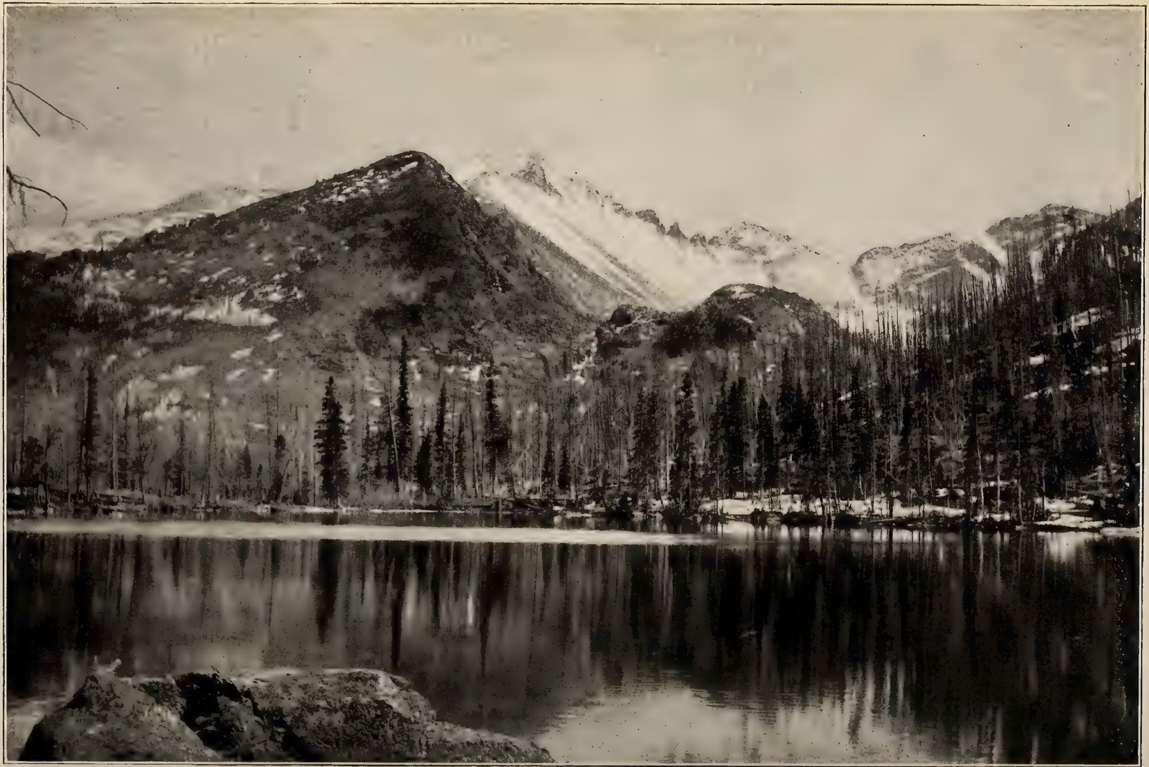
Timber-line, in this region, is about 11,000 feet, and downwards from this altitude many of the mountains wear purple robes of forest primeval. In these forests there are numerous fire scars. The most common species of trees are yellow pine, Douglas spruce, silver spruce, sub-alpine fir, lodge pole pine, Engelmann spruce and the merry, childlike aspens.

The Grand River drains the Pacific slope of this section,

ESTES PARK FROM TOP OF MT. OLYMPUS

The Big Thompson River.

By courtesy of Enos A. Mills.

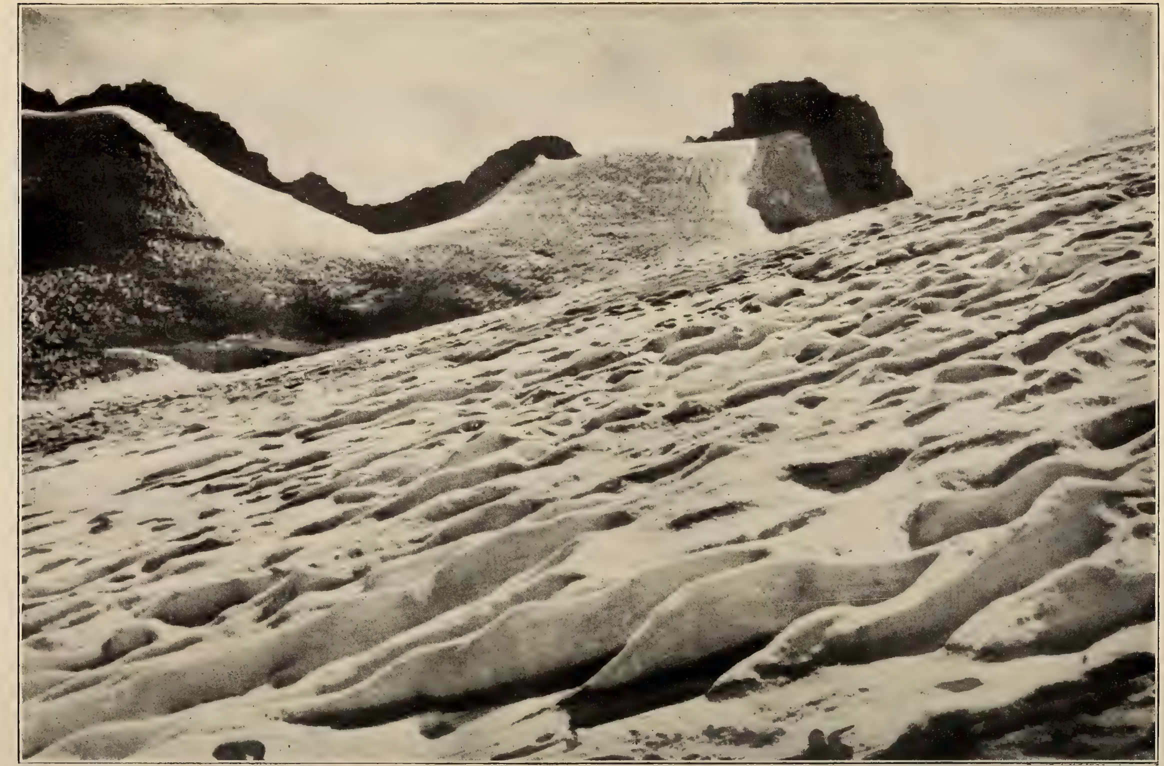


BEAR LAKE WITH LONG'S PEAK AND UPPER SLOPES OF GLACIER GORGE IN THE BACKGROUND.

By courtesy of Enos A. Mills.

FERN LAKE—ESTES PARK.

By courtesy of Enos A. Mills.



THE HALLETT GLACIER—ESTES PARK.

By courtesy of Enos A. Mills.

while through the cañons and over the terraces on the eastern slope foam and tumble numerous streams of white waters which unite in the Poudre, Big Thompson and the St. Vrain rivers, all of which join the Platte out on the plains.

The best-known lakes of the region are Grand, Odessa, Chasm and Gem. Altogether there are upwards of fifty glacier lakes; while most of these are small and lie above the altitude of 11,000 feet, each carries a charm or a wild ruggedness of its own.

The three named glaciers are Hallett, Sprague and Andrews; these are shelf glaciers, and, though not large, are picturesque and every inch chips of the old Ice King. The many glaciated gorges, together with numerous and enormous moraines, and the arrangement of these, make one of the most interesting of ice stories that is recorded in the mountains of the west.

The climate of the section may be called excellent; it is never extremely cold; the snowfall is not heavy, while the surface conditions are such that the entire region can be made accessible with comparatively little expenditure for road building.

Each season it is graced and charmed with more than a thousand varieties of wild flowers. Here in abundance grow the fringed blue gentians, mariposa lilies, violets, larkspur, alpine primroses, hare-bells, the Rocky Mountain columbine, several species of orchids, the wild red rose and scores of other favorite, handsome blossoms.

Among a numerous variety of bird life is the matchless singer the solitaire, the hermit, robin, bluebird, crested jay, ptarmigan, white-crowned sparrow, rosy finch, and the daring water ouzel.

Here numerous beaver colonies maintain their poetic ponds and primitive homes, and here, too, is the interesting companion of the crags and "eternal snows"—the mountain sheep. A few elk, bear and deer still survive.

There are about 20,000 acres of private holdings within the bounds of the proposed park, but the greater portion of its area is public land, most of which is already set aside as a part of the Medicine Bow National Forest.

It is asked by those who are urging this park that private holdings remain undisturbed and no land be bought by the Government in establishing this park. It is also asked that, on public lands, mining and prospecting be allowed to go on under regulations imposed in National Forests. (The region is largely non-mineral and there is not a paying mine in it.) Grazing and timber-cutting on public lands should be restricted to local use and be under forest service regulations.

Shooting, and the killing of any animal, should be prohibited within this area. If it should be necessary from time to time to kill dangerous or predaceous animals it should be done by or under the directions of park officials.

It is also requested that the forests, fish, flowers and foliage on the public land be protected from destructive agencies or excessive use.

The proposition is for the general welfare, and the people and the press of Colorado are almost unanimous in advocating it. However, a few politicians and some selfish interests are bitterly, aggressively opposing it.

Albert Bierstadt, Helen Hunt, Anna Dickinson and numerous authors and artists of note have paid this region the highest of tributes. The Appalachian Mountain Club brought out an entire book concerning it—"Mountaineering in Colorado," by Frederick H. Chapin.

Dr. F. V. Hayden, father of Yellowstone Park, says of Estes Park: "Not only has nature amply supplied this valley with features of rare beauty and surroundings of admirable grandeur, but it has thus distributed them that the eye of an artist may rest with perfect satisfaction on the complete picture presented."

WINTER IN THE HIGH SIERRA

By Charles H. Lee.

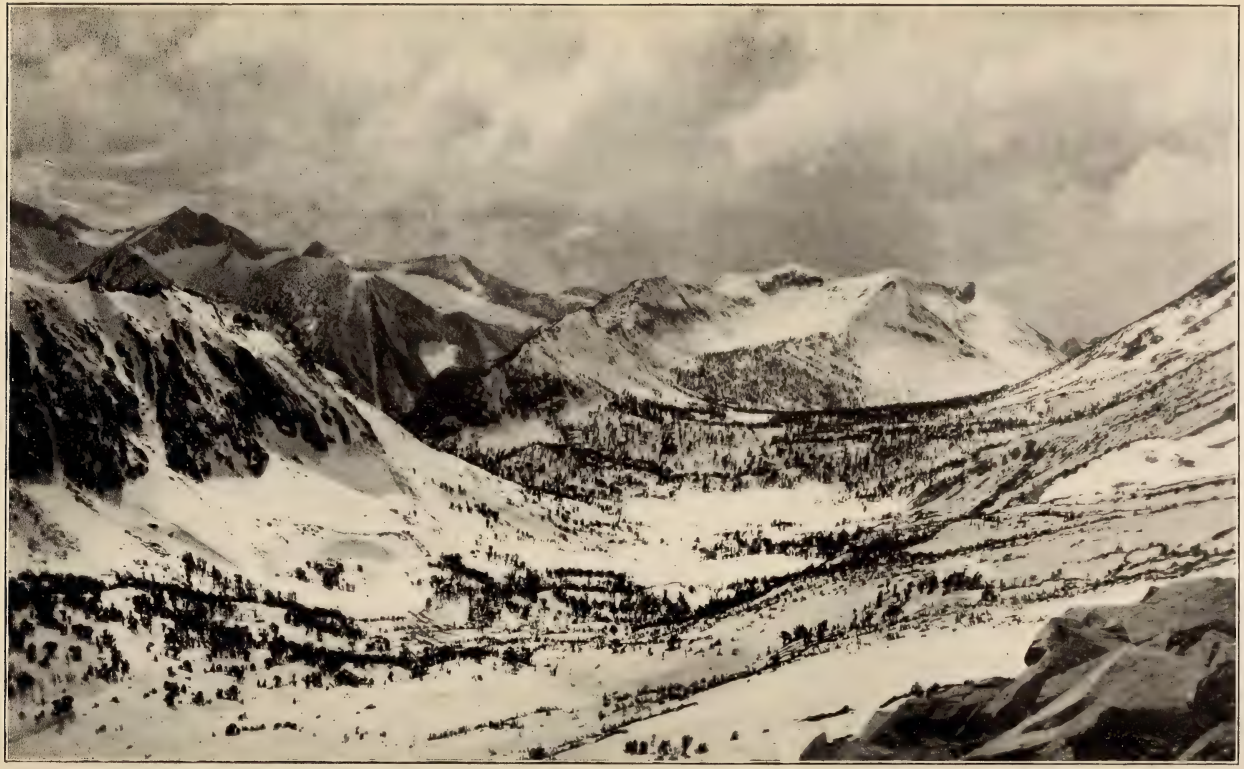
Occasionally, when the Sierra Club Outing is held in the Kern Basin or in the King's River Cañon region, small parties travel down from the summit into Owens Valley and find much to interest them in the sleepy little towns at the hem of the mountain-skirts. Few would consider it a privilege, however, to live in one of these towns the year round, even though they were within the shade of the High Sierra. But plenty of interesting work makes any place livable.

The majestic eastern face of the Sierra Nevada has a strange power over people who live in the valley, which grows stronger with each returning season. It is commonly said by the settlers that Owens River water is to blame—that one drink of the magic liquid will so change a man that the summit of happiness consists in living in Owens Valley; and it certainly is true that the natives never wander far from the borders of Inyo County. But whether realized or not, these mountains have a power to attract, and grow to be so much a part of one's life that when separated from them there is always the desire to return.

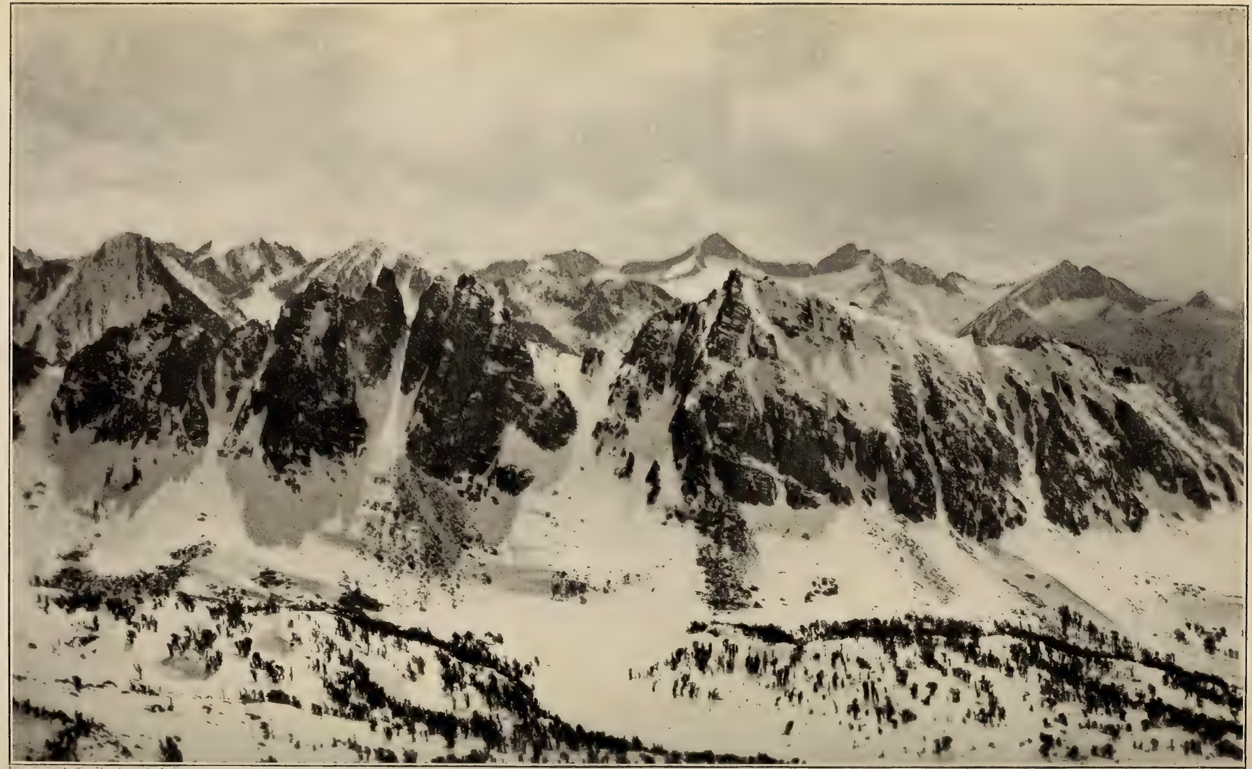
Their greatest interest lies perhaps in the infinite variety of color and detail which depend upon the position of the sun, atmospheric conditions, and the seasons. At no two hours is the view the same. There is a constant change every hour of the day and every day of the year. To the native Californian the changes that come with cooling temperature in the fall and winter are very new and strange. In September there appear spots of gold high up on the mountains at the stream fountains. Gradually these lengthen into bands which follow down the stream courses and soon become enriched with the scarlet autumn colors of the birch. Then in November a spot of yellow or scarlet appears in the open valley, and in a few days great masses of color brighten the landscape on every side. It is about this time that the mountain streams begin to freeze, and some that are not protected by vegetation are often at a complete standstill, reminding one of the condition which occurs on a city street when the power fails on a crowded car line.

Then some day in December the sky turns gray and night closes down at sunset, which at that time of the year is half past three in the afternoon. Out in the open one hears a murmuring and whispering from the mountains, broken by muffled roaring. Softly and quietly the cloud envelopes mountain and valley and soon through the darkness great white flakes come sifting down. When daylight returns the storm may lift from the valley and give the "old timers" a chance to gather and affirm that this is the biggest snow-storm since way back in the '60's, but all day, and perhaps longer, the mountains will be hid in clouds. The unveiling reveals a wall of white marble, magnificently sculptured, standing bold against the sky, with possibly a shining banner streaming southward from some high peak.

After such a storm is the time to see the animal life of the mesa and foothills. Beneath and within the stiff desert shrubs are warm shelters which the snow cannot fill, and here birds and rabbits hide and feed on the seeds which the fall winds have deposited around each obstruction. As soon as the warm sunshine returns bobcats and lynx are out on the soft snow hunting for a good meal, and they have not far to go. First, a rabbit comes crawling out through the top of a bush, and before he has time to shake the snow from his eyes he is pounced upon, and nothing remains to tell the story but a little fur and blood-stained snow. Then a flock of quail feel the warmth and work out one by one, only to feed the hungry cat who sits at the outlet of their shelter. Further up on the foothills one can often see a herd of deer which



BULLFROG LAKE REGION FROM KEARSARGE PASS.



KEARSARGE PINNACLES FROM THE PASS,

have been driven down out of the high mountains by the cold, and sometimes the tracks of a mountain lion.

The high mountains, however, are without life from the time of the first big snow-storm until late in May. The creeks are frozen over and buried many feet deep under the snow, and unless there is a wind roaring among the summit peaks not a sound breaks the great stillness. One feels more alone there than out on the open desert and is apt to find the magnificent scenes oppressive.

In early May, 1908, my work led me up into the southern limits of the High Sierra as far as the base of the cliff which drops off sheer from the summit of Mt. Langley on the east. The snow was well crusted and traveling easy from a base camp on Cottonwood Creek at the 9,000-foot level. The temperature at night was quite low and remained below freezing for a few hours after sunrise. Our horses discovered this to their sorrow when they went into a slushy meadow to feed. The water that splashed onto their tails froze solid, and in a few minutes each horse had a solid club of ice hanging down behind, which caused considerable excitement when discovered. This appendage remained until late in the morning.

Snow lay about six feet deep on the level cirque floor at the base of Mt. Langley. The long chain of lakes was still frozen over, but at the outlet of one the ice had broken through, exposing nearly one hundred feet of shallow stream channel. Lying in the pools and under projecting rock ledges were fifteen or twenty magnificent specimens of golden trout, enjoying the bright sunlight after the long, dark winter under the ice. As we were approaching this pool a wolverine jumped up and ran into the timber. It had apparently been fishing, for there were no signs of any other game near by.

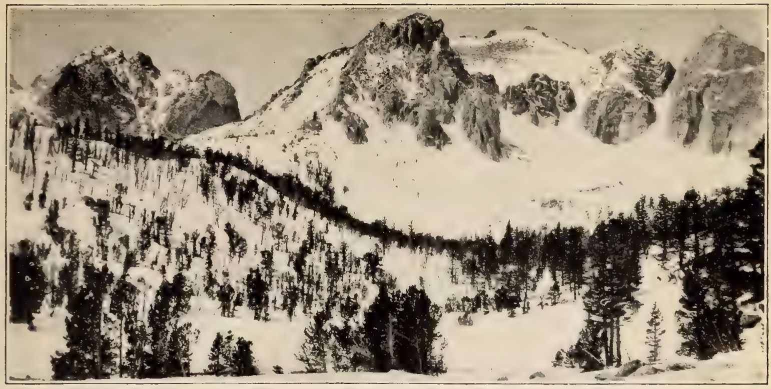
It is only occasionally that anyone attempts to climb to high elevations in the Sierra Nevada during the winter months. The trip made by Prof. Church and Mr. Marsh up Lone Pine Creek to an elevation of over 13,000 feet is described in the SIERRA CLUB BULLETIN of

June, 1909. In late February of the present year another attempt was made by two residents of Lone Pine to climb to the summit of Mt. Whitney, but the snow was so soft that they turned back after reaching an elevation of 10,000 feet. An easier trip, and one that affords almost as magnificent scenery, is that up the cañon of Independence Creek to the summit of the range at Kearsarge Pass. The writer, with two companions, reached an elevation here of 12,000 feet in early April of this year with very little difficulty.

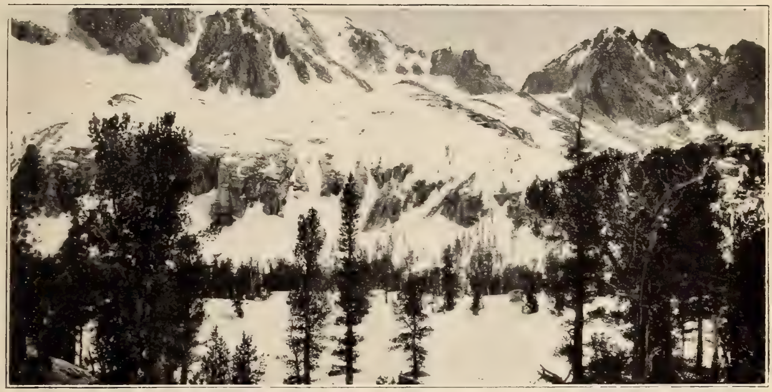
The start was made from a camp at the 6,000-foot level in a little meadow at the mouth of the cañon. The distance to the summit from this camp is about equal to that from the mouth of Lone Pine Cañon to the Pass, and the difference in elevation is 1,000 feet less. As it was planned to make the whole trip in a day there were no burdens to carry, and all our attention and energy were given to the climb.

Below the 8,500-foot level, snow lay in small patches and in the early morning was frozen so that an easy climb of two hours and a half found us in Onion Valley, still fresh and hopeful. The Pass is not visible from here, but the summit of Independence Peak to the south of the Valley is at about the same elevation, and as we looked up and up its steep north face for 3,500 feet, the work ahead of us was apparent. The three glaciated cañons which meet here, with the bold, dark cliffs and pure white floors spotted with pine and tamarack trees, were magnificent, and formed beautiful approaches to the sanctuary where dwelt the etherial, ghost-like summit peaks which were our goal.

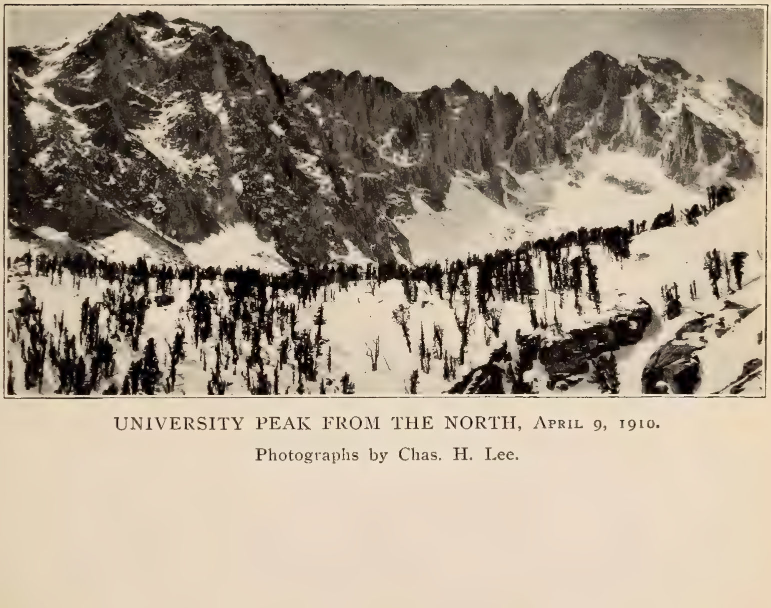
From Onion Valley the snow was practically continuous, and by 10 o'clock the crust was so weak that every few steps it would break, letting us down sometimes waist deep. We were provided with snowshoes, however, and found them very necessary during the remainder of the day. They were impractical on the steep slopes, but luckily the snow was hard here and progress was possible without them.



GILBERT LAKE ON THE KEARSARGE TRAIL, April 9, 1910.

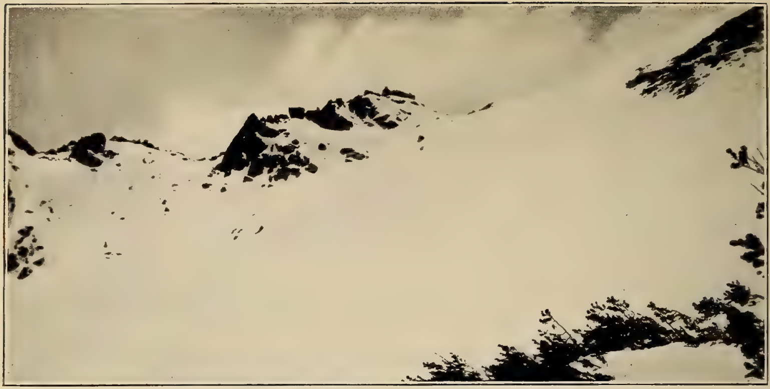


MATLOCK LAKE NEAR ONION VALLEY, June 10, 1909.



UNIVERSITY PEAK FROM THE NORTH, April 9, 1910.

Photographs by Chas. H. Lee.



KEARSARGE PASS IN WINTER, April 9, 1910.

LOOKING SOUTHWARD ALONG THE CREST FROM KEARSARGE PASS.

MRS. AUSTIN'S OLD HOME IN INDEPENDENCE, AFTER A STORM.

Photographs by Chas. H. Lee.

As we ascended, the scene about us became magnificent. The bare north face of University Peak and the wonderful cathedral-like cliffs to the west were set off by the talus cones buried in snow, while in the foreground lay a low timbered ridge, pure white, with the dark green foliage beautifully outlined against it, and at our feet lay an open level area, marking a frozen lake buried with snow. The jagged shadows cast by the cliffs and rocks on the white snow made a very interesting detail on all the north slopes.

An elevation of 11,000 feet was reached after five hours of climbing, and we stopped here for lunch. The thermometer registered 42° in the shade, but the temperature was comfortable when sheltered from the wind. We felt great discomfort from the lack of water, and when a boulder was found with a shallow depression filled with melted snow there was great rejoicing.

The next thousand feet of elevation was a difficult one on account of the steep slope and the soft condition of the snow under the noon-day sun. The mountain side above the Pothole Lake was covered deep with snow, which in some places had a hard crust which made the foothold dangerous, and in others was so soft that we sank almost waist deep at every step. But the Pass was in sight and every step made our success more sure.

At last the summit was reached and the magnificent panorama to the west came into view. It is a grand sight in summer, but as it lay before us in the white covering of winter the scene was wonderful. The floor of the basin above Bullfrog Lake was covered with unbroken snow which extended up to the crest of the talus slope at the base of the Kearsarge Pinnacles, out onto the slopes of Mt. Bago, and well up the mountainside to the north. The groves of tamarack trees stood out against the white so as to give very interesting detail, and bare oval areas here and there marked the buried lakes. The steep cliffs of the Kearsarge Pinnacles stood out black above the snow, casting long shadows down the slopes. Off to the southwest Mt. Brewer and the crest of the Kings-Kern Divide stood against the sky-line, and above all were piled up great masses of clouds which hung over the San Joaquin Valley.

The danger of sudden snow-storms is always present in these mountains during the winter, and even as we enjoyed the scene a mass of black clouds was collecting around Mt. Williamson and the peaks southward. We soon commenced the descent, therefore, and reached camp at dark, having spent four hours on the way down. The next day clouds gathered soon after noon, and within half an hour a good snow-storm was in progress, extending down as far as Onion Valley.

The success of this trip shows that there are opportunities of viewing the High Sierra during the winter months with very little expenditure of time and without a very fatiguing trip if the easier routes of approach are selected and snow conditions are favorable for snowshoes.

SIERRA CLUB BULLETIN.

PUBLISHED JANUARY AND JUNE OF EACH YEAR.

Published for Members. Annual Dues, $3.00.

The purposes of the Club are:—"To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada Mountains."

ORGANIZATION FOR THE YEAR 1910-1911.

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Librarian—Miss N. TAGGARD.

REPORTS

REPORT OF THE SECRETARY.

MAY 1, 1909, TO MAY 7, 1910.

The year just concluded has been the most prosperous in the history of the Sierra Club. There has been a net increase of 153 members during the year, a number more than 50 greater than the net increase of any previous year. The total membership now numbers 1256. A total of 240 new members joined the Club during the year and 87 were dropped from the list by reason of death, resignation, and non-payment of dues.

The balance remaining in the treasury, as indicated by the treasurer's report, is far greater than any heretofore. This is specially noteworthy when one considers the unusual expenditures of the past year. These consist of a heavy contribution to the building of the Paradise Trail, the purchase of a complete set of the English *Alpine Journal,* and a special election.

Besides the Paradise Trail work the Club has aided in the establishment of the Glacier National Park, in the attempt to create the proposed Estes Park in Colorado, and the proposed Appalachian National Forest, in securing the passage of the bill authorizing government troops to be detailed to protect the Mt. Rainier National Park, and in working to promote the general welfare of the Yosemite National Park.

The Club has received gifts of albums of photographs from several members who accompanied the Club on its 1909 outing. Mr. George Frederick Schwarz has presented the Club with three delightful volumes, of which he is the author, on subjects related to Forestry, and Mr. Walter Henry has donated several very scarce back numbers of the SIERRA CLUB BULLETIN. The Club extends its thanks to these generous donors.

Miss Lydia Atterbury has again been appointed custodian of the Le Conte Memorial Lodge in Yosemite Valley. She has given eminent satisfaction in this position. Through Mr. George Fiske the Club Library in the Lodge has been presented with over two hundred volumes that belonged to Galen Clark. It is very fitting that these should belong to this library and remain in the valley available to the public as Mr. Clark wished. It will be remembered that he was custodian of the Club's headquarters in the valley in 1899.

The local walks have attracted more than usual interest this spring. Mr. Ernest J. Mott, Chairman of the Committee on Local

Walks, has been untiring in his efforts to make them attractive to as large a number of members as possible. Excursions to Mts. St. Helena, Diablo and Hamilton were made. A trip to Lake Tahoe is planned for July.

The main outing to King's River Cañon promises to be as fine as any the Club has taken. Members of the party will be able to visit wonderfully beautiful portions of the High Sierra region that have hitherto been very difficult of access.

As each year passes, the importance of the work the Club is engaged in is emphasized and a broader field of usefulness opens before it. Respectfully submitted,

Wm. E. Colby, *Secretary.*

REPORT OF THE TREASURER.

May 1, 1909, to May 7, 1910.

To the Directors of the Sierra Club.

Gentlemen: I submit the following report of the finances of the Sierra Club for the year ending May 7, 1910:—

GENERAL FUND.

Receipts.

Cash on hand May 1, 1909:		
Cash in First National Bank		$1,669.51
Cash on hand with Secretary		6.57
Cash received from Wm. E. Colby, Secretary—		
Dues	$3,500.67	
Advertisements (June, 1909, and January, 1910, Bulletins	460.00	
Rent of Club Room	110.00	
Sale of Bulletins	14.75	
Sale of Club pins	36.75	
Refund of *Appalachia* postage advanced, and addressing	11.94	
Interest from Savings Deposits	18.83	$4,112.94
Total cash received		$5,789.02

Expenditures.

Publication of Bulletins Nos. 40 and 41	$1,180.18
Salary of regular attendant for twelve months	600.00
Rent of Room No. 302, Mills Building	360.00
Stamps and stationery for general correspondence	379.65
Stamps for mailing Bulletins	327.00
Carried forward	$2,846.83

Brought forward		$2,846.83
Permanent additions to Club Room and Library		188.81
Work on trails in Sierra Nevada Mountains		150.00
Advertising expenses		127.50
Le Conte Memorial Lodge expenses		117.15
Public lectures		96.10
Expenses connected with Hetch Hetchy election		75.00
Purchase of Club pins		60.45
Register boxes and registers for mountain peaks		57.00
Local walks, advertisements and notices		43.50
Extra clerical work		26.40
Running expenses of Club Room		19.25
Express		15.65
Miscellaneous small expenses		26.87
Cash advanced to Secretary's drawer		13.32
		$3,863.83
Cash on hand May 7, 1910:		
On deposit in First National Bank	$1,693.04	
On deposit in Security Savings Bank	110.00	
On deposit in Savings & Loan Society	108.83	
In Secretary's drawer	13.32	$1,925.19
Total cash on hand May 7, 1910, exclusive of permanent fund	$1,925.19	
		$5,789.02

PERMANENT FUND (LIFE MEMBERSHIPS).

On deposit in Security Savings Bank, May 1, 1909	$ 638.30
Interest accumulated during year	24.60
New life memberships during year	100.00
Total on deposit in Security Savings Bank, May 7, 1910	$ 762.90

Respectfully submitted,

J. N. Le Conte, *Treasurer.*

NOTES AND CORRESPONDENCE

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comment and suggestion on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, fish, forests, trails, geology, botany, etc., of the mountains, will be acceptable.

The office of the Sierra Club is Room 302 Mills Building, San Francisco, where all Club members are welcome, and where all the maps, photographs, and other records of the Club are kept.

The Club would like to secure additional copies of those numbers of the Sierra Club Bulletin *which are noted on the back of the cover of this number as being out of print, and we hope any member having extra copies will send them to the Secretary.*

Mount Rainier National Park.

The bill to prevent trespassers or intruders from entering the Mount Rainier National Park, in the State of Washington, has been passed and is as follows:

Be it enacted, etc., That the Secretary of War, upon the request of the Secretary of the Interior, is hereby authorized and directed to make the necessary detail of troops to prevent trespassers or intruders from entering the Mount Rainier National Park, in Washington, for the purpose of destroying the game or objects of curiosity therein, or for any other purpose prohibited by law or regulation for the government of said reservation, and to remove such persons from said park if found therein.

Yosemite, Cal., May 13, 1910.

Mr. W. E. Colby,

Dear Sir:—Mr. Clark expressed a wish that his books should be put in some place where people could have access to them, and as I know of no better place, ask if the Lodge will accept them and is willing to furnish a case so they will be protected and safe. There are about 300 books. Will you please let me know if agreeable and how soon they can be taken there, as I am anxious to get them out of the house, so as to turn it over to the Superintendent.

Yours truly,

(Signed) Geo. Fiske.

Editor's Note.—This gift has been accepted by the Club and the books will be placed in the Le Conte Memorial Lodge Library, where they will be available to the visiting public for reference.

A MAGNIFICENT GIFT.

Mrs. E. H. Harriman has given to the State of New York a tract of ten thousand acres of land and one million dollars cash for its improvement. And this magnificent gift, it is said, is accompanied by another of $1,625,000 from seventeen patriotic men and women of New York City to be used in purchasing adjoining land. "The intention," says William Eleroy Curtis, in the *Annals of the American Academy of Political and Social Science,* "is to make a park sixty miles long, varying from twelve hundred feet to twelve miles wide, upon the rim of the Palisades and along the west bank of the Hudson River from the boundary line of New Jersey to the city of Newburg, above West Point. It is understood also that the family of the late Abram S. Hewitt intend to make a similar gift of eight or ten thousand acres south of the boundary to the State of New Jersey, provided the legislature of that State makes an appropriation for its care and improvement. When this scheme is completed it will be in several respects the most notable playground in the world, embracing a total area of 45,000 acres along the bank of a great thoroughfare and immediately accessible to three or four million people." J. M.

SAN FRANCISCO, May 25, 1910.

MR. WILLIAM E. COLBY,
Secretary, Sierra Club, San Francisco, Cal.

DEAR MR. COLBY:—I received to-day a telegram from Mr. G. F. Marsh, of Lone Pine, saying that he climbed Mount Whitney and reached the summit yesterday and found our instruments left there last August all right. He gives the lowest temperature on the top of the United States proper last winter as 23° below zero and the highest, 57°. There is very little snow in the mountains; about the same amount now as on the first of July last year. It is quite an achievement to reach the summit so early in the year.

There is an interesting sequence connected with this question of getting the temperature on the top of the Sierra. You may remember that Professor Le Conte and other members of the Sierra Club left thermometers on Mount Lyell in the summer of 1898 and we obtained a record of—17° as the lowest. Subsequently we tried to get the instruments to the summit of Whitney and the outcome of it was that Prof. J. E. Church, Jr., established an observatory on Mount Rose. Last year, as you know, through the aid of the Smithsonian Institution, a small building was built on Mount Whitney. Do we not seem to be making progress in the conquest of the Sierra? Sincerely,

ALEXANDER G. MCADIE,
Professor.

RAINBOW BRIDGE IN UTAH TO BE NATIONAL MONUMENT.

WASHINGTON, June 3.—President Taft to-day, upon recommendation of the Secretary of the Interior, issued a proclamation creating Rainbow Bridge, a natural wonder within the Navajo Indian reservation, near the southern boundary of Utah, a national monument. Under the provisions of the national monument act, 160 acres of land surrounding the bridge are reserved for its protection.

For further information concerning the great natural bridges of Utah, see article by Byron Cummings in the *National Geographic Magazine* for February, 1910.

THE ALTITUDE OF MOUNT HUASCARAN.

In 1908 Miss A. Peck, of U. S. A., claimed to have ascended the north, lower summit of Mt. Huascaran in Peru. She made no instrumental observations above what she considers to be an altitude of 5,975 metres (19,600 feet), but, from eye-estimates only, asserted that this peak had a height of at least 7,317 metres (24,000 feet), and was thus the highest mountain of South America.

Believing Aconcagua to be the highest Andean peak, and furthermore to test the truth of these assertions, I decided to have a careful detailed triangulation made of the two summits of Mt. Huascaran. Through the assistance of Messrs. Fr. Schrader and Henri Vallot, acting for the Société Génerale d'Etudes et de Travaux Topographiques of Paris, an expedition was sent to Peru for me under the direction of M. de Larminat to effect this purpose.

Assisted by the Peruvian Government and favorable weather, M. de Larminat and his assistants were able to carry out this work successfully between August and November, 1909.

A base, 1,600 metres (5,248 feet) long was measured in the Rio Santa Valley in the Black Cordillera at an altitude of 3,800 metres (12,464 feet). This base was measured by means of a 50 metre (164 feet) tape of Invar metal. From two stations, one at either end of this base, and from two others, the positions and altitudes of which were determined by trigonometrical measurements from them, that is from four stations in all, the positions and relative altitudes of the two summits of Huascaran were fixed by azimuthal and zenithal angles taken by theodolite.

In order to ascertain the true height of these stations above average sea-level a progressive leveling was conducted from the highest station, called the Garganta Signal down along the mule-path leading from Yungay by way of Quillo to the sea at the port of Casma.

The Garganta Signal is higher than the col where the path between Yungay and Casma reaches its highest point. The difference in height between these two was ascertained by triangulation from the Garganta Signal to be 159 metres (521.5 feet). From the col down to sea-level at the port of Casma the leveling was performed by means of the tacheometer. The altitude of the Garganta Signal being thus established, it was an easy matter to fix the altitude of the other three stations, from which the triangulation of the summits was made.

From two of these stations from which it was visible, the altitude of the church tower at Yungay was also established at 2,568 metres (8,432 feet).

The average sea-level was determined by four double observations of two water-marks made at intervals of six hours, ten minutes between each. The agreement of these was satisfactory owing to the small amplitude of the tide at Casma, and also to the fortunate circumstance, that the observations were made at time of neap tide.

The results of these measurements show the height of the north peak of Huascaran to be 6,650 metres (21,812 feet), and the height of the south peak 6,763 metres (22,182 feet).

Fanny Bullock Workman.

February 15, 1910.

Dr. Longstaff's Expedition to the Karakoram.

Dr. Longstaff has now returned from his expedition to the unexplored regions of the Karakoram, north of Kashmir. The Karakoram range has always been shown upon maps as a great, unbroken wall stretching eastwards from the peak of K^2 (28,250 feet), and forming the water-parting between the Indian and the Central Asian systems of drainage. For a hundred miles east of K^2 there is no pass over this range known to the natives, and when Dr. Longstaff set out to explore the region last spring his aim was to cross the Karakoram range by a pass named the Saltoro, the existence of which was based upon tradition only, and the position of which was doubtful.

In June last Dr. Longstaff discovered the old Saltoro pass (18,200 feet), and crossed the Karakoram range with Dr. Neve and Mr. Slingsby. On the further side of the range the party came upon an immense glacier, which they judged from the maps to be flowing northwards and to belong to the drainage system of Central Asia. On exploring the glacier, however, Dr. Longstaff was astonished to find that it was flowing *to the south,* and he eventually discovered that it was piercing the main Karakoram range by an unknown gorge and that it was in fact an important feeder of the Indus. This discovery shows that the upper basin of the Indus is not limited, as has been supposed, by the Karakoram range. The newly discovered glacier is about forty-eight miles long, ten miles longer than the Biafo, which has hitherto been regarded as the largest glacier of the Himalaya-Karakoram mountains. The perpetual solitude of these high glacial valleys is brought home to us when we reflect that the greatest glacier outside polar regions had not been seen by living man till Dr. Longstaff's party reached it, and that though it has been for centuries one of the main sources of our river Indus, it has been unknown to geography till 1909.

Dr. Longstaff took clinometers with him, and he has measured many new altitudes. He discovered an immense chain of mountains to be standing north of his new glacier—a chain that is not shown upon any map.

The highest peak of the new chain was observed by Dr. Longstaff from three different places, and its height appears to be between 27,500 and 28,000 feet. This height is only surpassed by four known peaks. No mountain exceeding 27,000 feet in altitude has been discovered since 1858, and the elevations of the only mountains hitherto found to surpass 27,000 feet were all brought to light by the scientific operations of the Great Trigonometrical Survey. Dr. Longstaff has named the newly discovered peak Teram-Kangri.—*Alpine Journal for February, 1910.*

THE DUKE OF THE ABRUZZI IN THE HIMALAYAS.

In recent addresses to the Alpine Club at Turin, and to the Royal Geographic Society of Rome, the Duke of the Abruzzi spoke on his Himalayan explorations of 1909. May and June were passed in unsuccessful efforts to ascend the huge pyramidical mountain known as K^2. From the base camp at Rdokass, near the center of the Baltero glacier, an advance bivouac was made at the foot of the southern wall of K^2. Unavailing efforts were made to locate practicable trails on the east and west sides, but everywhere were either very steep ridges of loose, broken rock or sheer precipices and impassable glaciers.

However, the Duke attempted an ascent up the east-southeast ridge, where the conditions were so difficult and dangerous as to cause him to turn back at an altitude of about 16,000 feet. A second unsuccessful attempt was made on the west flank. The upper basin of the Austen-Goodwin glacier was surveyed, and the Duke was enabled to get views of the north side of K^2 and of the hitherto unknown district to the east.

In July efforts were made to ascend Brides Peak, on whose flank a base camp was established on the Chogolisa saddle.

The Duke passed three weeks at an altitude exceeding 21,000 feet, and made two attempts under conditions of great discomfort and considerable danger, owing to the monsoon weather, which brought heavy snow and dense clouds. Reaching 24,000 feet in one attempt, he attained on his second definite climb, on July 18th, with two guides, the record height on Brides Peak of 24,583 feet. The ridges were dangerous and difficult, while further progress was barred by a dense fog, which enveloped the party about 500 feet below the summit, which is 25,119 feet.

This unsurpassed height of 24,583 feet supplants the previous world record of 24,000 feet on Mount Kabru, attained by Norwegian mountaineers in 1908.

The Duke supplemented his strictly mountaineering feats by extended surveys, hypsometrical observations, meteorological records, and other scientific data of value and interest. His work is entitled to the highest possible recognition from geographers of all nations.—*The National Geographic Magazine, March, 1910.*

PLANTING GOLDEN TROUT IN GARDNER CREEK AND KINGS RIVER WATERS.

An expedition to secure golden trout from Volcano Creek, Mt. Whitney, for planting in Gardner Creek and Kings River waters, left Lone Pine September 17, 1909, under the supervision of Fish Commissioner Ober. The party consisted of Geo. Hall and S. G. McMurray of Big Pine, and H. J. Bell of Bishop, together with packer and guide.

The waters of the creek were turned at the same point at which the Sierra Club obtained its trout the year previous, on the 20th, and part of the 1500 trout secured, the balance being caught the following day. The trout, ranging in size from one to three and one-half inches, were placed in ten 10-gallon milk cans and packed two cans to the animal. The party camped on the return trip at Portugue Meadows the night of the 21st, and arrived at Lone Pine on the 22nd.

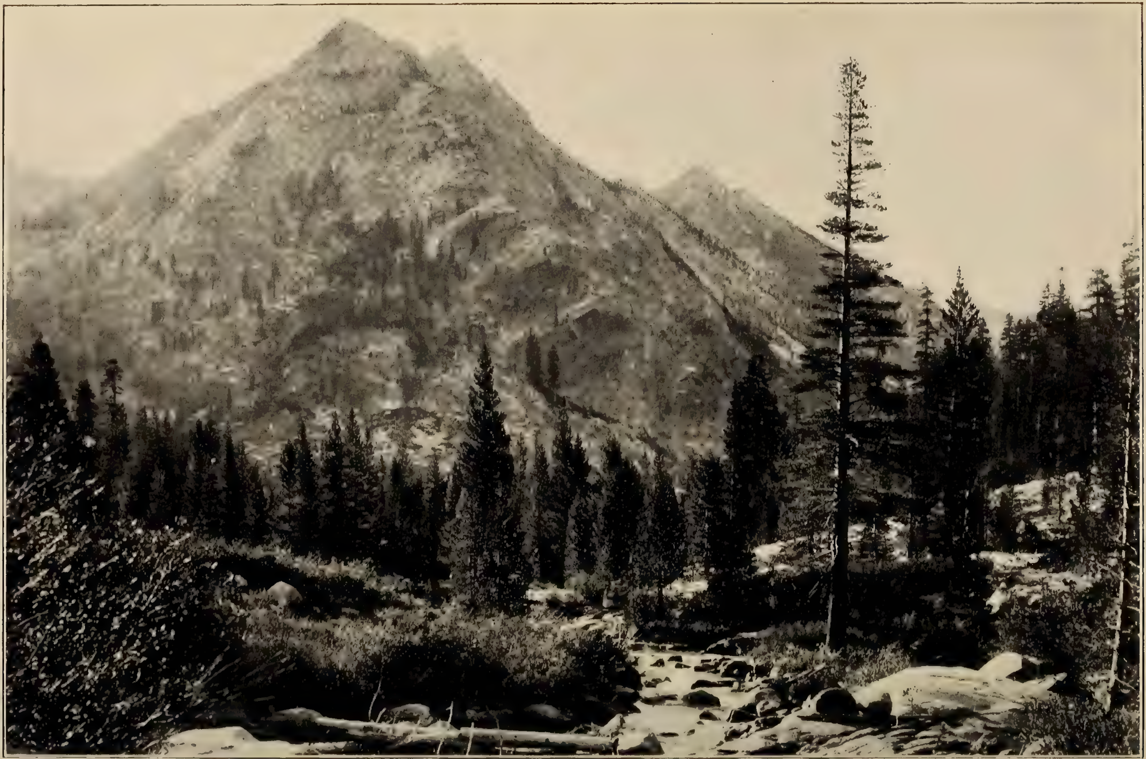
At Lone Pine the expedition was subdivided, Mr. Hall and Mr. McMurray proceeding by pack with one-half of the fish to Independence. From this point they followed the wagon road to the old Kearsarge Mine, thence by trail over Kearsarge Pass, an altitude of 11,623 feet, and around Bullfrog Lake; continued to Charlotte Lake and from there north to Gardner Creek.

Parts of the trail were very steep and at times almost undiscernible, yet the trip of eighty-five miles was made with a loss of less than ten per cent of the fish.

ONE OF THE LAKES ON GARDNER CREEK WHERE THE TROUT WERE PLANTED.

GOLDEN TROUT (FORMERLY VOLCANO) CREEK WHERE THE TROUT WERE TAKEN.

Photographs furnished by courtesy of A. A. Forbes.



BELOW GROUSE MEADOWS—LOOKING DOWN MIDDLE FORK OF KING'S RIVER.

From photograph by A. A. Forbes.

The head of Gardner Creek and five different lakes, in area from twenty to fifty acres each, were stocked with the trout. These waters are about five miles northwest of Rae Lake, Gardner Creek being tributary to the South Fork of Kings River and emptying into the river over precipitous cliffs.

Mr. Bell accompanied the other half of the fish by rail from Mt. Whitney station, five miles from Lone Pine, to Laws, sixty-five miles up the Valley. At Laws he was met with a four-horse stage and driven to the South Fork of Bishop Creek, a distance of twenty-eight miles, and an ascent of 6,000 feet.

Mr. Bell was joined at South Fork by A. A. Forbes, photographer, and Ira Hume, both of Bishop. The party started on the morning of the 23d for the summit and the Middle Fork of Kings River, the fish being packed on mules which, together with the packer, were in waiting.

The ascent to the summit was perilous to the men, the animals and the fish. After traveling about two miles, the trail became almost obliterated, in places the only guide being markings made by Rambeau Bros., sheepmen, over twenty years ago. They realized the difficulty of blazing the trail in the usual way by placing small stones on a larger one, as the snow slides often deposited stones of a similar size, and laid willow sticks pointing in the direction of the trail between the small stones. Credit for the safety of the outfit over this part of the trail is due to Mr. H. J. Bell who, as Forest Ranger, had crossed the summit every summer for the past eight years.

The first serious difficulty was encountered when the outfit was forced out of the trail on account of the snow and obliged to make its way among stones ranging in size from a man's head to boulders as large as a house. This snow field was so precipitous that it was necessary to build a trail through these stones for half a mile before a place could be found where the animals could climb upon it.

The party traveled over this snow field, which was practically a sheet of ice, for a quarter of a mile before reaching the summit, the animals not being allowed to halt for fear of losing their footing.

After crossing this pass, the summit, an altitude of over 12,000 feet, and which consisted of a small mesa, was reached at noon.

The first planting of thirty fish was made in North Palisade Lake, about half way down the cañon. The trail from this lake followed the left side of Dusy Creek to the first falls, crossed at a little flat, and continued on the right bank around the second falls.

Danger was again encountered in descending this cañon, the trail between the rocks being so narrow that there was barely space for the animals with their packs to pass through. For twenty feet the descent was so steep and curved that it was necessary to shoot the animals down one at a time and risk their safe arrival at the bottom.

The second planting of two hundred fish was made in the Middle Fork of Kings River at Langue Meadows the evening of the 23d, and the party, worn and tired, camped in the shade of Langue Peak.

The morning of the 24th they traveled down the river to Grouse Meadows and planted the balance of the trout in two different places, the water through the Meadows being about three feet deep and fifteen to twenty feet wide for a quarter of a mile. The entire distance covered by this expedition was one hundred and fifty miles, and the loss of fish but fifty in number.

The small loss of the fish in both expeditions was due to the movement of the cans en route, which furnished oxygen sufficient to preserve the life of the fish, and to the care taken in placing the cans in water wherever a halt was made, with the mouth of the can, over which a barley sack had been drawn, up stream. The temperature of the water containing the fish was changed to that of the stream by gradually pouring water from the stream into the cans.

These transplantings were made to ascertain definitely if the golden trout is a distinct species, or whether the golden color is due to a reddish deposit found a few inches below the beds of the Mt. Whitney creeks.

The waters of Gardner Creek and Kings River, in which these trout were placed, are free from fish and the bottoms are covered with a white granite sand; also, these streams are fed by melting snows, while the waters of the Mt. Whitney streams are supplied from subterranean sources. Should the trout retain their golden hue in the changed environments, all question of a distinct specie will be removed. These expeditions were financed by a few citizens of Independence and Bishop, and all services, with the exception of packers and guides, were furnished free of charge.

The Kings River party spent a day hunting in Grouse Meadows, and then hurried homeward for fear that a threatened snow storm would obliterate the trail, thereby making the removal of the pack animals from Grouse Meadows impossible until spring, and the return of the men very hazardous. So great was the anxiety that no camp was made until they arrived at Slim Lake, on the far side of the summit, at 10 P. M.

A. A. FORBES,
MARY R. FORBES.

STATE TO PLANT TROUT IN HIGHER ALTITUDES OF THE SIERRA.

District State Deputy Game Warden A. D. Ferguson has a fish story to tell that will interest every trout angler in Fresno and adjoining counties. It is that the State Game and Fish Commission has made the money allowance for the work, has authorized him to proceed and that he has perfected arrangements for a summer's activities in the planting of fish in the mountain originating streams of Fresno and nearby counties. In the prosecution of this work, he will have four mule pack trains ascending to headwaters of streams and also the land-locked lakes in the high Sierra.

On the 10th of next month, reports Ferguson, he will receive by the State's fish car from the hatchery at Sisson a first consignment of 100,000 Loch Leven trout for distribution in the high Sierra.

The Loch Leven is a gamey trout which was originally transplanted from Scotland, and the reason of its choice for distribution here by the commission is that it has been proven by experiment to be the only trout that will spawn in a lake that is without a water inlet. There are many such sheets of water in the higher altitudes fed only by the melting snows of the Sierra.

These Loch Levens will be transported to Markwood Meadows by pack train to be distributed in the lakes that feed the branches of the south fork of the San Joaquin River, Dinkey Creek, the north fork of the Kings, the Dinkey Lakes, Coyote Creek, and numerous other, smaller and nameless lakes yet considerably sized sheets of water fed by the eternal snows.

About three weeks later will be received a consignment of as many young Loch Leven trout to be taken off the car at Lemon Cove and to be likewise transported to the ridge above Hume in stages by pack train and liberated for self-propagation in the lakes that feed the south fork of the Kings River and the Kaweah River in Tulare County.

Simultaneously also will be continued the work with the native fish in taking them out of streams where they abound, removing them by pack train and placing them in streams which at present are barren of fish. The usual custom followed in this process is to turn a small branch of the stream carrying trout into pot holes, netting the fish out of these and transporting them in transplanting cans. All this laborious mountain transportation must necessarily be done by mule pack train because faint trails and mountain ascents must be followed and overcome where none but the plodding cautiousness of the mule or burro can be absolutely depended upon.

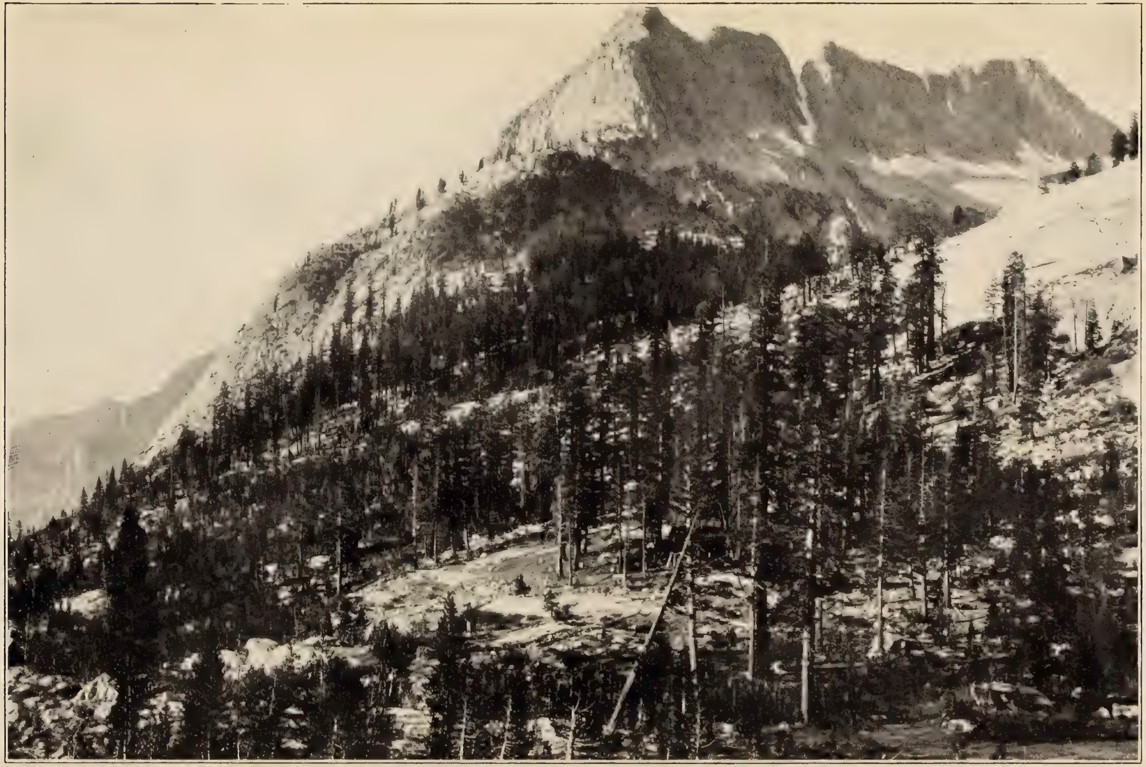
For this transportation of little fish a special design of cans is employed, oblong in shape and each holding about ten gallons of water and fish, one hanging on either side of the pack saddle of mule, donkey or burro. The cans are of galvanized iron reinforced with hardwood strips to stand the wear and tear and hard knocks that they are subjected to on one of these mountaineering jaunts, where as before said, the trails are so narrow and precipitous that the cans frequently scrape along the rocky mountain side. In this manner fish may be transported over long distances for days at a time without trouble or even appreciable loss. The cans are provided with screen tops so that they may be submerged over night in a nearby stream and the fish given fresh water of a temperature such as it is accustomed, and likely to live in when finally liberated to work out its own salvation.

While three and four pack trains will thus be engaged in the busy summer's work, the intention is to distribute the young fish in such widely separated regions as to stock eventually every stream suitable for trout in Fresno, Tulare, and a part of Madera counties.

Besides the above work, Deputy Warden Ellis has with the special approval of the United States Bureau of Fisheries been authorized to work in the Kern River region and plant fish in the streams flowing from the east into the big Kern River. For this work he will have three species of golden trout to distribute, the agua bonita in the south fork, the Roosevelti in Volcano Creek and the whitei in Soda Creek, also stocking streams flowing from the west into the Big Kern with so-called Kern River trout.

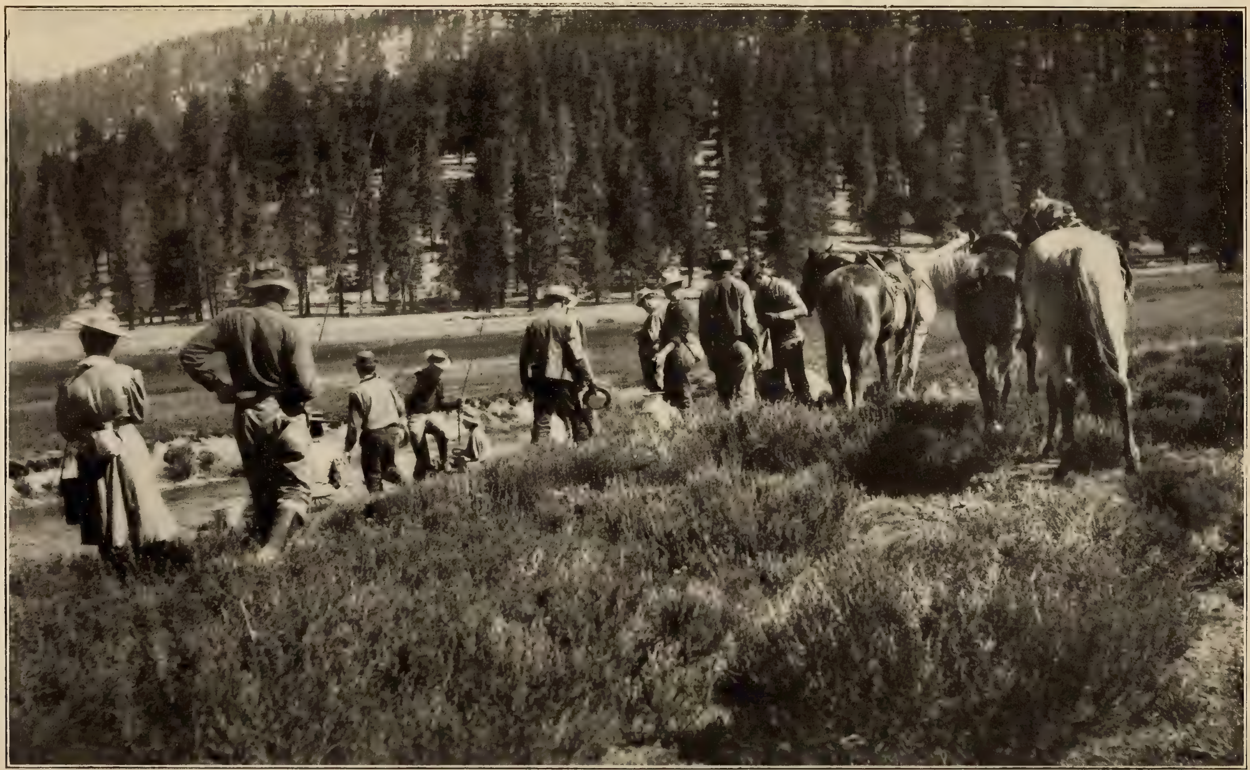
Yet another commission has been entrusted to Deputy Fish Commissioner Ober in Inyo with the co-operation of stockmen to plant fish in the headwaters of the Kings in the rougher and more inaccessible mountain regions yet more approachable from the Inyo County side than from Fresno. This work will make use of the fourth pack train. The third will ascend to the middle and south forks of the Kings and the fourth will distribute fish in the north fork of the Kings and south fork of the San Joaquin sections.

"It is the intention," said Warden Ferguson, "to bring trout from Rock Creek on the Mono side to stock the waters in the neighborhood of Mount Goddard on this side of the Sierra, and complete a work which I undertook in 1897, when I took fish out of Rock Creek to stock waters across the summit to the Mono, a tributary of the south fork of the Kings, a work in fish transplanting which has exceeded the fondest expectations, for the fish have thriven and multiplied. The Rock Creek trout is a beautifully marked specimen of the brook trout. Its stock was originally from Colorado, imported probably twenty-eight years ago.



LANGUE PEAK—MIDDLE FORK OF KING'S RIVER.

From photograph by A. A. Forbes.



SIERRA CLUB CATCHING GOLDEN TROUT FOR TRANSPLANTING, GOLDEN TROUT CREEK, KERN RIVER, 1908.

From photograph by Glenn L. Allen.

"I may add that it is the purpose in connection with this summer's fish planting work in the high Sierra to keep a careful record of the present fish plantings and to secure data of previous plantings with a view to have authoritative references for the future as to the varieties of fish, their origin and where to be found in the streams whose fountain heads are in the Sierras, these data to be recorded not only in the publications of the California Fish Commission, but also in the bulletins of the United States Fisheries Bureau."

In this connection Warden Ferguson stated further that as the result of the summer's fish campaign and allowing the fish three or four years' time to multiply a work will be accomplished that was started in 1891, and that in regions with no previous plantings, save then with the assistance of stockmen, upwards of 100 streams and lakes will be stocked that have previously been barren of fish life.

"A glance at the map will show," said he, "that the headwaters of the San Joaquin and the Kings have their rise almost wholly in Fresno, and naturally there are 100 or more tributary streams that will make perfect trout waters and make the mountains in the San Joaquin Valley a paradise for the fishermen. The plan incidentally involves the keeping of the varieties separate and as far as possible to plant the streams to particular varieties.

"It has been demonstrated that trout planted in new waters thrive amazingly well and grow to greater size than in the streams that have known them for generations. The mere fact that no streams in the high mountains have been found in which they are in their native state is not an indication that the transplanted fish will not thrive there. The barrenness of these streams in the high altitudes is readily accounted for on the very plausible theory that coming from high plateaus these streams have high falls which preclude the fish ascending from the main streams to spawn. Where the fish have been planted above such falls, they have thriven and propogated in great number, and the prediction is a safe one that in about three years hence these now barren mountain streams will be plentifully stocked with trout.

"The example of this is furnished right here in Fresno County. Originally there were three streams not frequented by trout, the south and middle forks of the Kings, and Fish Creek, near the border line of Madera. Due to the first fish-planting work in 1897, splendid trout fishing may to-day be had in Roaring River, Crown Valley Creek, Pitman, Ranchiera, Tamarack, Big Creek, the south fork of the San Joaquin, and a score of other smaller streams as well as lakes."—*Fresno Republican,* May 31, 1910.

CAMPING OUT IN THE MOUNTAINS.

Comparatively few Californians have much acquaintance with the mountain regions of the State, save those who live in them. This is true of even most of the oldest residents. A large proportion of the adult inhabitants scarcely have been in the mountains at all. And merely to cross the Sierra Nevada by rail gives little idea of the majesty and beauty of the great range. Railroads of necessity seek the lowest grades, which in the Sierra are found in cañons hemmed in by walls of rock that obscure nearly all views save those of the depths from which they rise and the heights to which they ascend. And on the line of the Central Pacific snowsheds prevent the traveler from seeing much of the finest scenery in that part of the Sierra traversed by the road.

If, however, one could get an unobstructed and leisurely view along every mile of railroad passing through the mountains of California he would still be far from knowing them. The railroads are few and the mountains are many. By far the larger part of the area of the State is mountainous, the Sierra Nevada as well as the Coast Range extending from end to end of California, through ten degrees of latitude, and connecting at each extremity with transverse ranges of lofty altitude and much interest.

Furthermore, the railroads, with the exception of a few new lines, penetrate the mountains where lumbering has stripped them of much of their original beauty, and left unsightly, bare, rocky slopes where Nature had provided forests as far as the eye could see.

Mining, likewise, has marred the aspect of the mountains along many miles of railroads, while fire and grazing have done much more to lessen or destroy the native charm of the much traveled ways.

So to see the mountains as Nature made them, in all their glory of primitive forest, with their streams running clear and their flanks ungashed by the work of miners, one must leave the familiar lines of travel and penetrate where the whistle of the locomotive has never been heard. And to do this in the best way, so as to learn most about the mountains and gain an abiding love for them, the visitor should go afoot, on horseback or by wagon, and dwell among them, living entirely in the open, by night as well as by day.

The walker sees most and enjoys most, if well and strong enough for the exertion required. And even for persons not strong, unless disease forbids such exercise, a few miles of leisurely walking in the high Sierra, from day to day, result in rapid increase of health and vigor. It is, indeed, surprising how much walking and climbing may be accomplished in the mountains by persons accustomed to indoor living when at home. When the feet get hardened, and the muscles recover from their first unwonted strain and fatigue, there is commonly a speedy gain in strength and endurance.

In the dry summers of California tents are not required for sleeping out of doors, even in the high mountain regions, where the nights and early mornings are chilly. A snug sleeping-bag, or a pair of heavy blankets, affords all the warmth and covering needed. Possible showers may be avoided by the shelter of trees, or by providing a rubber blanket or sheet of oilcloth for a covering in such contingencies.

The beneficial effects of sleeping in the open air cannot well be overrated, especially in the mountains, where mosquitoes and other insect pests are ordinarily escaped. But near mountain meadows, even in the high Sierra, mosquitoes are sometimes troublesome, and it is well for campers to be provided with suitable netting.

The campers and trampers are those who get most profit and delight from a stay in the mountains of California. Theirs is the simple life, under the most favorable conditions for health, recreation, and enjoyment, provided the company be congenial and suitable provision be made for the comfort of all.

This leads up to the suggestion that there should be numerous clubs in this State to promote and facilitate mountaineering, and to conserve, as well as make more accessible, the chief beauty spots and greatest natural attractions of the mountains. One such organization exists under the name of the Sierra Club, with headquarters in San Francisco, which has upwards of 1,250 members, representing all parts of the State. Its primary object was the conservation of forests, streams, and other charms of the mountains, but for years past an Outing section of the Club, limited to about 150 men and women, has enjoyed an annual camping trip in California or elsewhere on the Pacific Coast. Last year the camp was in the Yosemite and the Tuolumne Meadows, and this season the King's River region, south of the Yosemite, is the chosen field.

The manner in which these Outings are held illustrates the advantage of forming a club for such purposes. Not only are the expenses in this way much lessened, but there is also a great gain in comfort and convenience, compared with camping in a small way, by a family or a few persons only. Good cooks are employed by the Sierra Club, who are experienced in camp needs, and a club committee, familiar with all the requirements, provides the food, arranges for special excursion rates by rail or stage, hires a pack-train for use in the mountains, selects camping grounds, and looks after all other arrangements. The other members of the Outing section have nothing to do but walk, eat, sleep, and enjoy themselves to their hearts' content, free from all the work and bother that attends camping where the party is small.

There are certain other advantages in numbers. Everyone may find suitable or congenial company, and at night, when all are gathered about the camp-fire, there may be good singing, instrumental music, story-telling or interesting "talks" on various subjects by professional or other persons capable of giving special information or relating entertaining personal experiences. The camp-fire every evening is one of the most enjoyable features of the Sierra Club Outings. A "talk" by John Muir, its venerable President, is a great delight as well as highly instructive.

Each member of a Sierra Club Outing provides his own bedding, and packs his belongings in a canvas "dunnage" bag, which is strictly limited in weight when turned over to the pack-train, as transportation by mule-back in the mountains is very costly. But the pack-train relieves the party from the heavy toil of carrying blankets, food, and other necessaries in the mountain solitudes, where wagon-roads are left behind and trails often become steep and difficult, even for walkers who bear no burden.

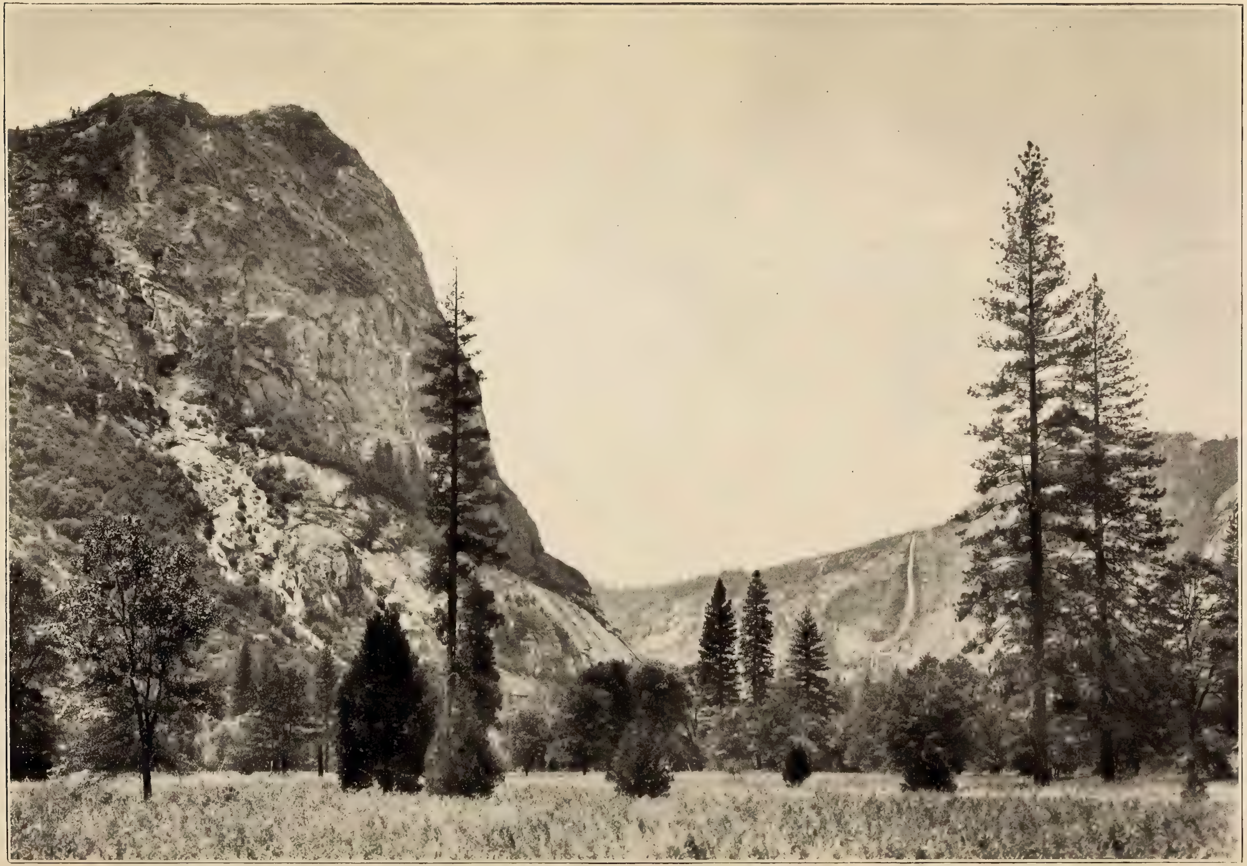
To camp in the Sierra Nevada under such conditions, free from labor and care, and with every hour of the long day available for walking, climbing, fishing, botanizing, study of trees, birds, insects, rocks or other objects, or for social enjoyment, or mere idling and sight-seeing, is to experience the sum of earthly enjoyment out of doors, if the camper be in tune with Nature and of a disposition to appreciate and enjoy the blessings that surround him.—*Wm. A. Lawson, in the Sacramento Bee.*

HETCH HETCHY HEARING.

(Order—In the matter of the permit of May 11, 1908, to San Francisco, relating to the Hetch Hetchy Valley.)

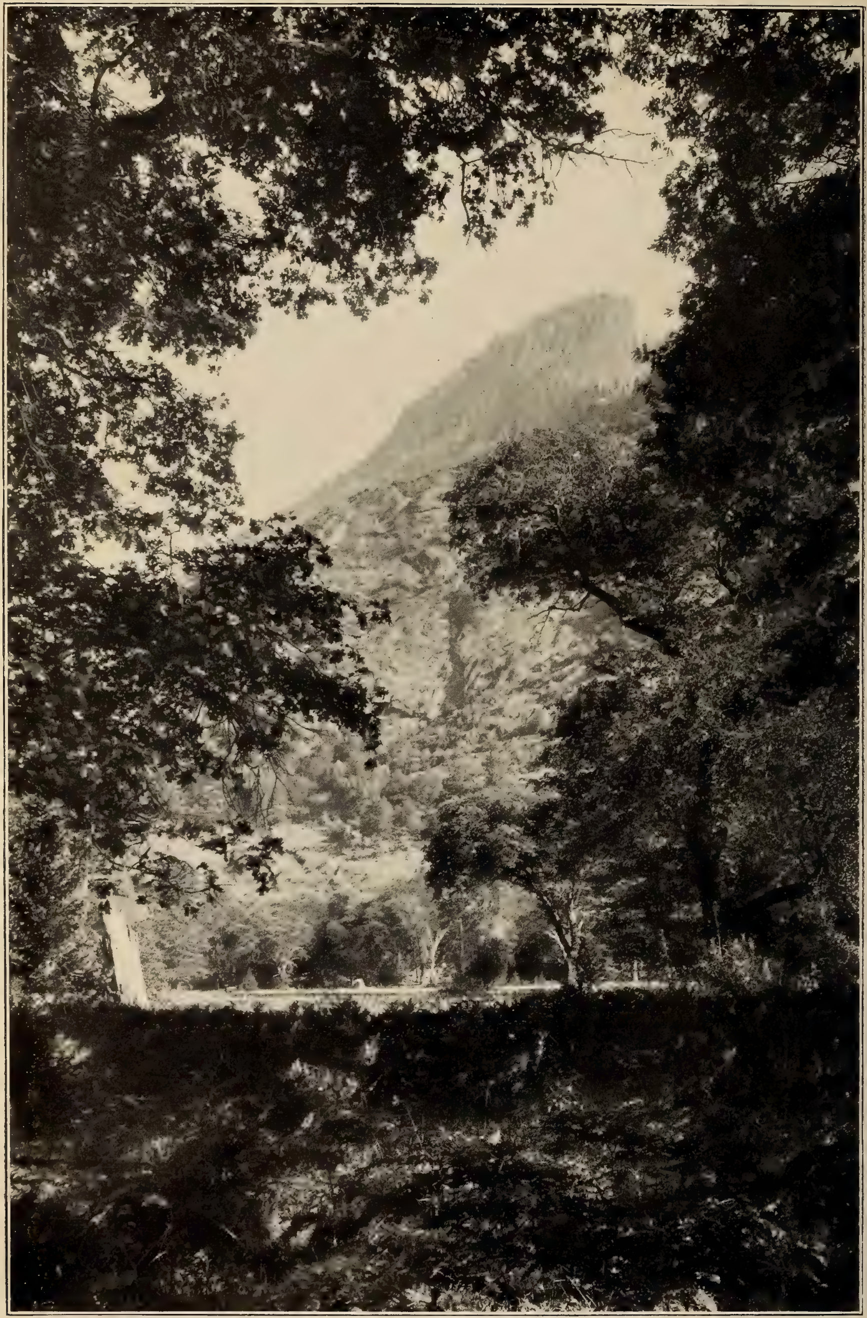
In the matter of the order directed by the Secretary of the Interior to the Mayor and Supervisors of the City and County of San Francisco, State of California, on February 25, 1910, to show cause why the Hetch Hetchy Valley and reservoir site should not be eliminated from the permit to said city of date May 11, 1908;

The above entitled matter having come on regularly to be heard on the 25th day of May, 1910, at the hour of 10 o'clock A. M., and said City and County of San Francisco, having, through its representatives, applied for a continuance of said hearing and for



"HETCH-HETCHY VALLEY IS A GRAND LANDSCAPE GARDEN, ONE OF NATURE'S RAREST AND MOST PRECIOUS MOUNTAIN MANSIONS. AS IN YOSEMITE, THE SUBLIME ROCKS OF ITS WALLS GLOW WITH LIFE, WHETHER LEANING BACK IN REPOSE OR STANDING ERECT IN THOUGHTFUL ATTITUDES GIVING WELCOME TO STORMS AND CALMS ALIKE."—*John Muir.*

From photograph by Herbert W. Gleason.



VIEW IN UPPER END OF HETCH HETCHY VALLEY.

"IT WAS A GARDEN OF PARADISE, THIS VALLEY; A LESSER YOSEMITE, BUT VERY DIFFERENT, WITH AN INFINITELY CHARMING INDIVIDUALITY OF ITS OWN; SMALLER BUT MORE COMPACT, LESS GRAND BUT NOT LESS BEAUTIFUL. IN ITS WONDERFUL FOREST GROWTH OF GREAT VARIETY AND MAGNIFICENT DEVELOPMENT IT SURPASSES THE YOSEMITE VALLEY ITSELF."—*Harriet Monroe.*

From photograph by J. N. Le Conte.

further time within which to more fully respond to said order, said application being made upon the ground that sufficient data was not available upon which to make showing responsive to said order, and an adjournment to Thursday morning, May 26, at 10 o'clock A. M., having been taken to permit the advisory Board of Army Engineers to confer with the engineers representing the several parties interested herein respecting said application and the propriety of granting the same, whereupon the matter of said application for continuance and postponement having been duly and fully considered by the Secretary of the Interior and said advisory board of army engineers, said board having recommended the same in writing.

It is hereby ordered that said City and County of San Francisco be, and is hereby, granted to and including the first day of June, 1911, within which to respond to said order, to show cause, and that hearing upon said order be, and it is hereby, continued until the hour of 10 o'clock A. M. on said last-mentioned date.

Said continuance and postponement is granted for the purpose of enabling said City and County of San Francisco to furnish necessary data and information to enable the Department of the Interior to determine whether or not the Lake Eleanor Basin and the watershed contributary, or which may be made contributary, thereto, together with all other sources of water supply available to said city, will be adequate for all present and reasonably prospective need of said City of San Francisco and adjacent bay cities without the inclusion of the Hetch Hetchy Valley as a part of said sources of supply, and whether it is necessary to include said Hetch Hetchy Valley as a source of municipal water supply for said City and County of San Francisco, and bay cities.

In granting said postponement and continuance it is understood said City and County of San Francisco will at once proceed, at its own expense, and with due diligence, to secure and furnish to said advisory board of army engineers all necessary data upon which to make the determination aforesaid, and pending the hearing upon said order to show cause no attempt shall be made by said city or any of its officers or agents to acquire, as against the United States, any other or different rights to the Hetch Hetchy Valley than it now has under said permit, and that no efforts shall be made by said city to develop said Hetch Hetchy Valley site.

Said advisory board of army engineers is hereby authorized to procure such independent data and information as it may deem necessary or proper to a full and complete determination of the matters committed to said board and the Secretary of the Interior for determination and that said board may call upon the Geological Survey or other bureaus of the Department of the Interior for such assistance as any such bureau may be able to render in the premises.

It is further understood that said city will, as soon as practicable, submit to said advisory board a full exhibition of its proposed plan of development and utilization of water under said permit, together with estimates of the cost thereof, and also a full statement of all outstanding water-rights, both for irrigation, power, and other uses, on the Tuolumne River and Lake Eleanor Basins and the proposed method of providing for the protection thereof.

All questions as to the validity and legality of said permit of date May 11, 1908, are hereby expressly reserved for decision and determination until said final hearing.

Dated this 27th day of May, 1910.

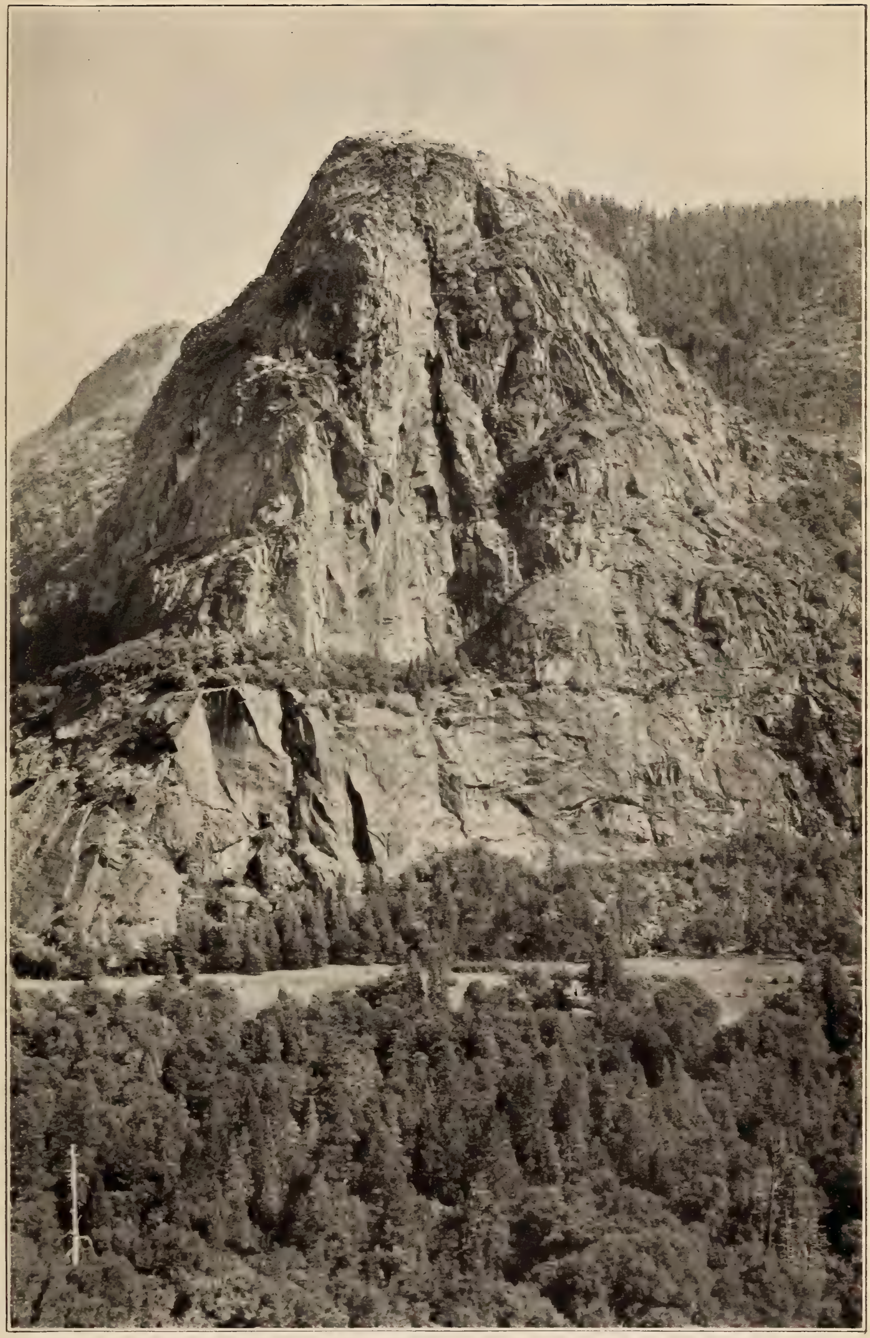
R. A. Ballinger,
Secretary of the Interior.

In connection with the foregoing order, Secretary Ballinger is reported as having made the following remarks at the hearing: "I have had, gentlemen, a rough report made to me (I say rough—it has not yet been thoroughly finished by the board of army engineers, although they have communicated to me the substance of their report), pursuant to the adjournment taken yesterday on their conference with the engineers representing the various parties.

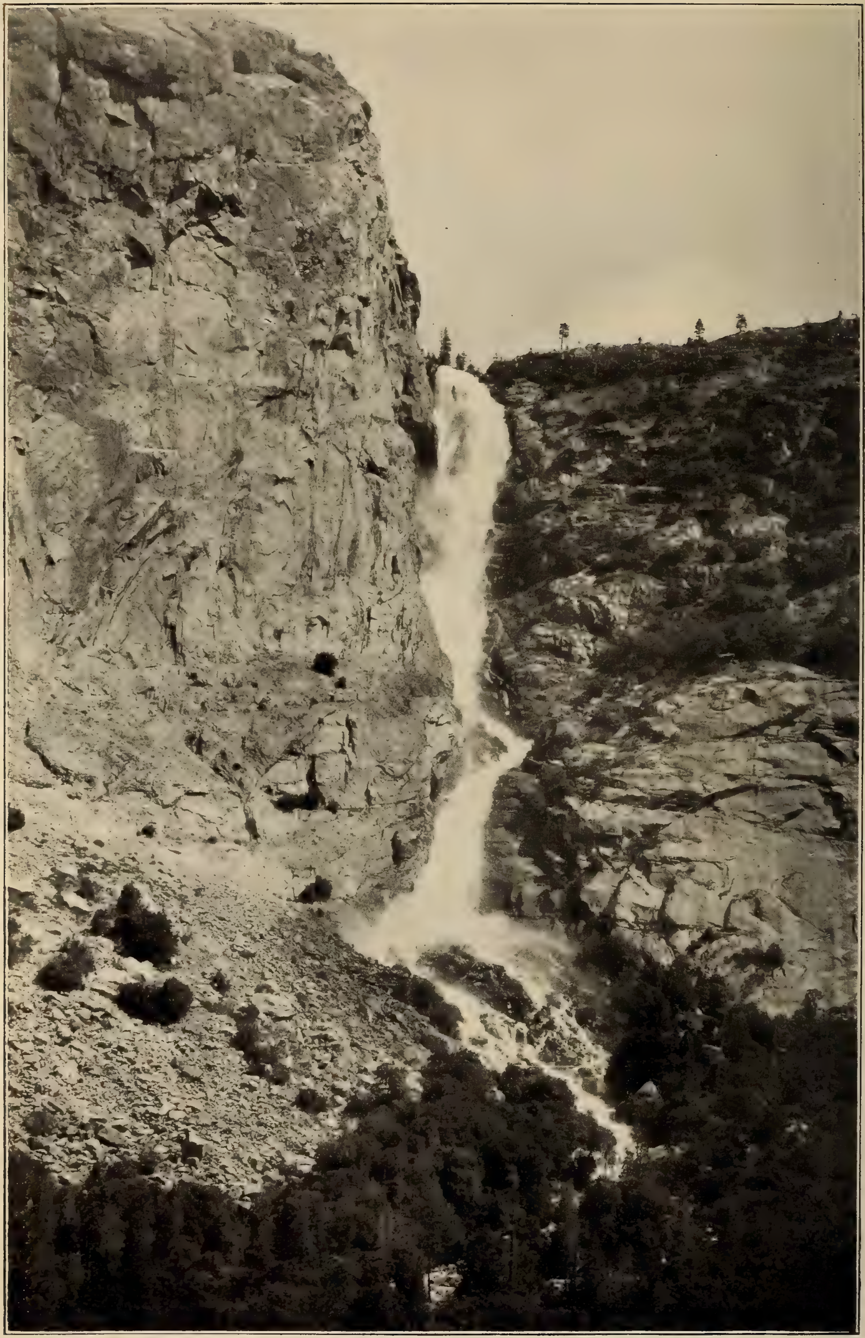
"The substance of the report is that they believe and so advise me as secretary of the interior, that it will be necessary, in order to secure such data as will allow them to advise intelligently this department on the sources of water supply necessary for the present and prospective needs of San Francisco and the bay cities if the Hetch Hetchy Valley be eliminated, to have detailed investigation and inquiry into the conditions of watersheds and the like.

"In pursuance of that report, I feel it my duty to make an order continuing this matter for further investigation, in order that the department may be equipped with all necessary information to make a final and proper disposition of this question.

"The authorities of San Francisco should present to this advisory army board, from time to time, the data that they acquire, so that the army board may know the progress that is being made, and also should outline to this board the scope and plan of the investigation which the city proposes to make, so that the board can proceed in its way with a perfectly intelligent view of what is going to be done, and the general details of the



"THE MOST STRIKINGLY PICTURESQUE ROCK IN HETCH-HETCHY VALLEY IS A MAJESTIC PYRAMID OVER 2,000 FEET IN HEIGHT WHICH IS CALLED BY THE INDIANS 'KOLANA.' IT IS THE OUTERMOST OF A GROUP LIKE THE CATHEDRAL ROCKS OF YOSEMITE AND OCCUPIES THE SAME RELATIVE POSITION ON THE SOUTH WALL."—*John Muir.* From photograph by Herbert W. Gleason.



WAPAMA OR HETCH HETCHY FALL.

"IT IS THE COUNTERPART OF THE YOSEMITE FALL, BUT HAS A MUCH GREATER VOLUME OF WATER, IS ABOUT 1,700 FEET IN HEIGHT, AND APPEARS TO BE NEARLY VERTICAL THOUGH CONSIDERABLY INCLINED, AND IS DASHED INTO HUGE OUTBOUNDING BOSSES OF FOAM ON THE PROJECTING SHELVES AND KNOBS OF ITS JAGGED GORGE."—*John Muir.* From photograph by Herbert W. Gleason.

methods of development proposed in the Hetch Hetchy Valley should also be reported to the board.

"I want to know what is necessary so far as the Hetch Hetchy Valley is concerned. The thing which this government wants to know, and the American people want to know, is whether it is a matter of absolute necessity for the people of that city to have this source of water supply; otherwise it belongs to the people for the purpose for which it has been set aside."

EDITORIAL NOTE.—The members of the federal commission mentioned in the order and appointed by the President are Colonel Spencer Cosby, Lieutenant Colonel John Biddle and Lieutenant Colonel Harry Taylor, all being army engineers of the highest standing and of unquestioned ability. This is a happy outcome of the matter since the public will now have an opportunity of being informed as to the facts underlying the water supply situation. Every one will await the report of this board with great interest and this vexed question bids fair to be put at rest for all time.

It is reported that Congress has appropriated $12,000 to defray the expenses of this commission.

YOSEMITE NATIONAL PARK.

Remarks of Hon. W. F. Englebright, of California, in the House of Representatives, Thursday, June 2, 1910:

The House being in Committee of the Whole House on the state of the Union and having under consideration the bill (H. R. 25552) making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1911, and for other purposes—

The Clerk read as follows:

Yosemite National Park, California: For protection and improvement of the Yosemite National Park and the construction of bridges, fences, and trails, and improvement of roads other than toll roads, including $12,000 to be immediately available for necessary material and labor in the installation of a road-sprinkling system, $62,000.

Mr. FOSTER of Illinois. Mr. Chairman, I move to strike out the last word. I observe in this paragraph there is an increase of $32,000 over the appropriation of last year for the Yosemite National Park. Is this increase of appropriation necessary for this park? I will ask the gentleman from California (Mr. Englebright), as I understand it is in his country.

Mr. ENGLEBRIGHT. The increase in this appropriation is for the purpose of macadamizing the roads of the valley, and also for the purpose of sprinkling the roads that are now very dusty. We have only two seasons in California, wet and dry. The result is that at this time of the year these roads get very dusty, and it is very necessary that something should be done to make them passable.

Mr. Cox of Indiana. Does the Government get any revenue whatever out of that park; and if so, how much?

Mr. Englebright. The revenues run to about $15,000 a year.

Mr. Cox of Indiana. How does it derive them; by license fees?

Mr. Englebright. From rents of buildings and concessions.

Mr. Keifer. Ought not that keep up the road and keep it in condition?

Mr. Englebright. It would keep the roads up if they were in good condition, but they have first got to be macadamized and fixed up.

Mr. Keifer. That road is a narrow road, made by blowing off rocks, in my recollection.

Mr. Englebright. That road needs considerable work to fix it up, because it is a very narrow road.

Mr. Keifer. I have been over it. I did not suppose it had to be sprinkled.

Mr. Englebright. It also has to be macadamized farther up in the valley.

There are but few people in the United States who have not heard of the scenic beauty of this great and only Yosemite Valley. Some of you have seen it, and those of you who have not have read in books and papers of the wondrous scenery of this famous spot and wistfully hope that some day in the future you will have an opportunity to visit and see it.

Painters have patiently endeavored to picture some parts of its beauty and grandeur; they have tried to show the inspiring majesty of the great El Capitan, towering 3,000 feet above your head, a great massive granite cliff, beside which you could place five Washington Monuments, one upon the other, and yet not reach the top, and from which stone enough could be obtained to build a hundred cities.

Travelers have told you of the vastness of that huge naked rock, the Half Dome, rising 5,000 feet above you, bold and steadfast, ideal in its magnificence, inaccessible to the most courageous climber; yet in the unknown past this great granite wonder felt the mighty forces of nature when an awful convulsion of the earth rent it in twain and left it a half dome.

Some of you have seen Clouds Rest, a great mountain of solid rock rising in all its sublimity 6,000 feet above the floor of the valley. Look when you may, you always find a cloud hovering near its summit, likened unto a winged messenger waiting to convey your thoughts to a distant friend who is not with you to enjoy the unparalleled grandeur of the scene.

Many are the treasured pictures that have been made of the towering cliffs that inclose the valley—the Three Graces, Sentinel Rock, Cathedral Spires, the overhanging rock, and so many spots that appeal to lovers of nature—but it is impossible to picture them all, and the painter is yet to live who can duplicate on canvas the marvelous beauty and supreme grandeur of the Yosemite Valley.

Only a poet could have named the Bridal Veil Falls, modest and unassuming as it is. No one dreams when they see it that this veil of water is falling from a height of 940 feet.

And yet that does not compare with the upper Yosemite Falls, so marvelously enchanting in its beauty that it is famed the world over; whose crystal waters, sometimes only like a thread, drop sixteen hundred feet from the summit of the cliffs to the rocks below, and then go on and on, like a thing of life, dropping and dropping another thousand feet to reach the River of Mercy, which flows through the valley.

The Merced River as it comes from the summit of the Sierra Nevadas is a turbulent stream and leaps with a rush 605 feet down over the Nevada Falls, and again 350 feet at the Vernal Falls, then as a cataract roars and tumbles through a mountain gorge until it reaches the valley itself, through which it flows peacefully and quietly, doing its share to help make this valley a paradise for man.

Well do I remember the sight I saw on one of my visits to the valley in the autumn of three years ago. You can visit the valley any time in the year. Nature had clothed the trees in a many-hued foliage with nearly all the colors of the rainbow, and, glance where you would, a pleasant sight met the eye.

With a friend, we had ridden up the trail from the Sentinel Hotel to Glacier Point, climbing thirty-two hundred feet in elevation above the valley—7,214 feet above the level of the sea. We were close to the overhanging rock opposite the Half Dome, which, with all its vastness, seemed to give us greeting. We wished it were possible to step across the impassable chasm. Away down below us lay the peaceful valley, the Merced River, like a tiny streak, winding its sinuous way through it, while Mirror Lake reflected on its silver surface the rocks beyond.

Looking to the east we could see the Nevada and Vernal Falls, and at that height and distance could hear the roar of their falling waters.

There had been a slight fall of snow, which, owing to difference of elevation, had not fallen in the valley below. This made a mantle of white, covering the high mountains. The forests here and there showed their varied colors, and rugged rocks in places made dark spots in the landscape. Mount Starr King, reaching upward 9,200 feet toward the heavens, stood a grand, noble object between us and the summits of the Sierra Nevadas, which outlined the horizon. Here was true nature, a glorious extended view—beautiful, magnificent, sublime.

But the scene spread out before us was not yet complete, for while we gazed rays of the sun broke through the clouds and there suddenly appeared before us a most beautiful rainbow. Looking again, it was a double one, adding its pure colors to the marvelous view. We stood there pleased, delighted, thrilled, spellbound, and then, awe-inspired by the artistic grandeur of the glorious sight, uncovered our heads in recognition of the Great Ruler of the Universe, who created all.

But the Yosemite Valley is only a small part of the Yosemite National Park. The park itself covers an area of 719,000 acres, and includes the beautiful Hetch Hetchy Valley, the Grand Cañon of the Tuolumne, the Tuolumne Meadows, the Merced and Tuolumne rivers, numbers of high mountains reaching to elevations of 10,000 feet to 13,000 feet above the level of the sea, beautiful trout streams, charming lakes, magnificent forests of pine, oak, and cedar, beautiful shrubs and flowers, a place to see Nature as Nature should be seen; a perfect paradise in summer, where one may live in perfect comfort out of doors half of the year, yet accessible in winter when the snow on the mountains gives a different aspect to the scene.

Not only does this national park contain some of the finest forests of the West, which still stand in all their native beauty, but it also includes the Tuolumne and Merced groves of the wonderful California Big Trees, or Sequoia gigantea, a sight which pays travelers to come thousands of miles from all parts of the earth; trees that are now growing which take you back in time for five thousand years, great grizzly giants, immense in size but wonderfully symmetrical and beautiful, taking rank amongst the great wonders of the world.

The Yosemite National Park is a magnificent inheritance of the American people, set aside for the education and pleasure of all, a great piece of natural scenery to be preserved for all time. It should be well taken care of by the United States. Liberal appropriations should be made for proper roads, trails, buildings, and for every convenience, so that visits to this park can be made as easily as to other places under the care of the Government, and I hope no objection will be made to the appropriation reported by the committee at this time.

Editorial Note.—It has been reported in the daily papers that this appropriation has been granted, which marks a considerable increase over appropriations of former years. Congressman Englebright is to be congratulated on the outcome.

COMFORT IN YOUR OUTING BOOTS.

The strength of the chain is that of its weakest link; the speed of a tramping party, that of its slowest walker. Therefore it is essential that every precaution be taken to see that the outing boot be as nearly perfect in its fitting qualities and make up as it possibly can be made. Of one's entire outfit, the boots that cover the organ of greatest resistance, the feet, should receive the most careful attention.

The following suggestions from one who has given the question many years of careful study will not be amiss to the readers of this BULLETIN, and I also hope of some benefit to them.

Outside of the fitting one of the most important questions is "what material to be used," and as no one wishes to carry more weight than necessary, lightness and flexibility as well as strength and durability are most desirable.

The materials to be selected should be in accordance with the local conditions, as to moisture or dryness. If the latter, as in the High Sierra, one should avoid all oils or waterproofing, as being unnecessary, adding extra useless weight and preventing the proper ventilation of the feet. The soles will never hold fast the hob or hungarian nails when waterproofed or oiled. Tan leathers are preferable to black, as they are cooler and easier kept clean.

The outing boot should be made as light in weight as possible, commensurate with solidity, and we should therefore eliminate all unnecessary linings, tips, boxing in the toes, etc., as useless and adding extra warmth and weight.

The plain toes without any tips or boxings are far more comfortable, as there is more chance for evaporation, and less danger of blistering one's toes from irregular deep rooted creases; also freedom from the friction one usually experiences on the edges of tips and boxings in shoes having them.

The soles should be extension all around, with extension heels, thus protecting the uppers, counters and toes from stubbing and cutting against the jagged ends of rocks, etc. Good sole leather outside counters will lengthen the life of an outing boot.

As to the correct height of such boots, that is a matter of preference. Men usually wear their trousers tucked in the tops of their boots. They have no trouble with their slipping down and wrinkling. But women should select a boot of sufficient height (18 inches) to reach well over the curvature of the calf, as it will thus hold up much better, and give less annoyance to the wearer.

Too much attention cannot be given to the fitting of the outing boot. While a careful selection of the length is most necessary, particular care should be given to see that there is not too much width, as too wide a boot does not properly support the foot in the non-moveable part, the tarso, and allows a friction of which you well know the results.

When the feet are protected, with a properly fitting boot, one need not start out on a journey with misgivings as to their comfort. One need not fear any interference from the greatest annoyance on tramping expeditions, swollen, sore and blistered feet. F. K.

SIERRA CLUB PINS.

A very attractive Sierra Club pin is on sale at the office of the Secretary. The price in silver or bronze is $1.00; and in gold, either as a pin or watch-fob, $3.50. The gold pin is only made to order. Those desiring to have a pin sent by registered mail should send to the Secretary of the Sierra Club ten cents in addition to the above-mentioned price.

SIERRA CLUB STATIONERY.

The official die of the Sierra Club is now at store of Paul Elder & Co., 239 Grant Avenue, San Francisco, who are prepared to execute orders for Club stationery.

This publication is from the press of C. A. Murdock & Co., 68 Fremont Street, San Francisco.

STATE FORESTRY NOTES

A. M. Homans, State Forester; Wm. C. Hodge, Deputy Forester;
M. Smith, Jr., Assistant Forester.

A revision of the Forest Laws of California was published by the State Forester in June. Instead of being entitled "Forest Laws" as formerly, the pamphlet is called "A Handbook of Forest Protection" in order to emphasize the forest-fire work. The pamphlet contains rules for the prevention of forest fires, instructions to fire fighters and a list of the State firewardens. Copies may be had on application to the State Forester, Sacramento, Cal.

The season promises to be a dangerous one for forest fires. A number of serious fires have occurred already. The force of wardens, however, both voluntary and paid, is larger and more efficient than ever before.

The State Forester has entered into an agreement with the United States Forest Service for a co-operative study of the rate of growth of Eucalyptus. The object of this study is to obtain definite information as to the yield that may be expected from groves at different ages, planted in forest form.

U. S. FOREST SERVICE NOTES

National Forest Boundaries. The following letter is self-explanatory:

February 7, 1910.

The President, The White House.

Sir: After having very carefully considered the matter of eliminations from and additions to the National Forests, we respectfully recommend that the following general policy be adopted:

1. Lands wholly or in part covered with brush or other undergrowth which protects streamflow or checks erosion on the watershed of any stream important to irrigation or to the water supply of any city, town, or community, or open lands on which trees may be grown, should be retained within the National Forests, unless their permanent value under cultivation is greater than their value as a protective forest.

2. Lands wholly or in part covered with timber or undergrowth, or cut-over lands which are more valuable for the

production of trees than for agricultural crops, and lands densely stocked with young trees having a prospective value greater than the value of the land for agricultural purposes, should be retained within the National Forests.

3. Lands not either wholly or in part covered with timber or undergrowth, which are located above timber line within the Forest boundary or in small bodies scattered through the Forest, making elimination impracticable, or limited areas which are necessarily included for a proper administrative boundary line, should be retained within the National Forests.

4. Lands not either wholly or in part covered with timber or undergrowth, except as provided for in the preceding paragraphs, upon which it is not expected to grow trees, should be eliminated from the National Forests.

We have the honor to be,

Very respectfully,
Your obedient servants,
(Signed) JAMES WILSON,
Secretary of Agriculture.
(Signed) R. A. BALLINGER,
Secretary of the Interior.

Our 60,000 miles of National Forest boundaries were examined by Forest Service officers during 1909, which will result in the restoration to the public domain of 4,000,000 acres or more of National Forest land. This is something over two per cent. of the total National Forest area. The greatest part of this is grazing land, and the changes which are called for in forest land are of minor importance. The greatest restorations were made in Idaho. Since these changes have been announced, a considerable number of protests from stockmen have been received by the United States Department of Agriculture against the eliminations in certain quarters. The latter have learned that a low rental giving them protection is far better than a free range allowing the invasion of nomadic herders. They also assert that the protection afforded the plant growth has increased streamflow and improved the watershed. This is gratifying news, for the policy of regulation, in business, in traffic and the use of our national resources is one of the means of salvation offered this great nation. W. R. D.

FOREST TAXATION. The opinion handed down by the Maine Supreme Court March 10, 1908, favorable to the State's constitutional right to regulate timber cutting, continues to attract wide attention. State regulation and forest taxation were the principal subjects of the papers presented at the January meeting of the American Forestry Association. The general conclusions reached seem to be that "State regulation would be unjust, impracticable and unconstitutional, unless preceded by a reform in the methods of taxing forest lands." American Forestry for May prints several of these papers together with an abstract of the opinion of the Maine Supreme Court. What promises to be a genuine contribution to the settlement of this highly important but vexatious question is the co-operative study now carried on by the United States Forest Service and the Wisconsin State Board of Forestry upon the question of forest taxation in that State. They propose to gather statistics of present property values in each town, and the values of the forests, as a basis of their conclusions on the present assessments on forest lands. W. R. D.

BOOK REVIEWS

EDITED BY WILLIAM FREDERICK BADÈ.

"THE DAWN OF THE WORLD."* Lovers of poetry and romance as well as ethnologists will take delight in "The Dawn of the World," Dr. C. Hart Merriam's most recent volume, which deals with the myths and legends of a single tribe of Indians, the Mewan tribe of California. The stories have been handed down through the generations, the more ancient ones telling of the time when the earth was inhabited by the First People, curious beings, half human, half god-like, but always possessing something of the nature or characteristics of the animals or elements into which they were finally transformed. These First People were the creators, not the progenitors of the Indian people.

The Mewan tribe, while distributed rather widely over Central California, was not nomadic and consequently the mythology and even the language varies somewhat in the villages of the different localities. Thus most of the legends say that Coyote-man, the chief divinity of the First People, made the Indians out of feathers; but the now extinct Bodega Bay Indians believed that the god used sticks of wood, unfortunately of varying degrees of strength and toughness. For the tribes made of oak or madrone were hardy and endured, while they, being made out of the sticks of the sage-herb which are hollow, had little strength and perished early.

The fire myths are particularly beautiful. There was a time, the Indians say, when the world was so dark, cold and foggy that the First People were unable to find food. But they knew that somewhere was the light and warmth that would relieve them of their misery. The First People who afterwards became the Robin and the Humming-bird stole the fire from a far country and brought it down to earth. The Robin's breast now shows where he laid upon it at night to keep it from growing cold. The Humming-bird flew to the far east, where the sun rises and caught a spark from the Star-woman's fire and carried it home under his chin, where the mark shows to this day. The tales having familiar scenes for their setting, like those of the Rock Giant of Tamalpais and the Falcon of Mt. Diablo, will appeal particularly to the dwellers of the San Francisco Bay region.

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* *The Dawn of the World.* By C. HART MERRIAM. The Arthur H. Clark Company, Cleveland, 1910. 273 pages and 15 plates. Price, $3.50.

The present-day myths, which Dr. Merriam considers separately, are likewise full of poetry, especially the beliefs concerning Ghosts. They tell how the Ghost remains in the body four days after death and then, in invisible form, following the path of the Wind, journeys westward across the ocean to the Village of the Dead. Whirlwinds, they say, are dancing Ghosts. Rainbows come to tell people a new soul is born.

From the ethnologist's standpoint Dr. Merriam's book is invaluable, as many of the tales were told him by the last representatives of villages now deserted, of tribes now extinct; but it is seldom indeed that the lay reader finds such a treasure-house of quaint, poetical conceptions opened before him. The stories are presented to the imagination with a most sympathetic insight into their beauty and significance, and with a charm and simplicity and directness of style that is itself a reflection of an earlier age, of simple natures living nearer the vanished radiance of the world's morning. M. R. P.

"PUBLIC RECREATION FACILITIES."* Open air recreation and its vital influence on both physical and moral well-being, is beginning to occupy the attention of the public as it never has before. It is an encouraging sign to note the gradual awakening to the economic and social, as well as the æsthetic value of parks, whether they consist of a few city squares reclaimed from the rent rolls and devoted to the sports and pastimes of children who would otherwise be in the hands of the police or the juvenile court; or of some great work of nature, some glorious scenic region set apart from the common fate of the wild country and saved from despoliation to add to the total sum of health and happiness, above and beyond the mere husbanding of material resources that has lately occupied the national attention. A recent volume on "Public Recreation Facilities" has been issued by the American Academy of Political and Social Science, a Philadelphia society of some 5,000 members, which publishes annually six volumes devoted to living questions of the day. The present number consists of twenty-eight articles grouped under the general heads of "Typical Parks—National, State, County, and City," and "The Social Significance of Parks and Playgrounds." Many of the papers strongly advocate the preservation of our mountain scenery. Speaking of the proposed Southern Appalachian Park reserve,

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* *"Public Recreation Facilities."* Vol. XXXV, No. 2, of *The Annals of the American Academy of Political and Social Science,* Philadelphia, 1910. Price: cloth, $1.50; paper, $1.00.

Prof. Geo. T. Surface, of Yale University, says: "We are well aware of the influences rife for suppressing any movement which, for the well-being of posterity, thwarts the march of predatory gain. It is, therefore, becoming that we emphasize in a way which cannot be misunderstood, the importance of conserving some of nature's stores on a sufficiently large scale, not only to fulfill adequately the urgent demands of this generation, but to meet the more pressing demands of our children and those who shall come after them." . . . "The cities will grow larger and more numerous . . . and so great will be the number needing and seeking recreation that the mountain reservations will afford neither quiet nor privacy, unless large areas be acquired in this generation." M. R. P.

"HAWAII AND ITS VOLCANOES."* Dr. Charles H. Hitchcock's recent book, "Hawaii and Its Volcanoes," occupies a unique place among the many books on this interesting subject. Besides giving a very clear exposition of the physiography of the Hawaiian Archipelago, Dr. Hitchcock has collected from many different sources the history of the exploration of the craters of Mauna Loa and Kilauea dating from 1790 to the present. Detailed descriptions of the conditions prevailing in the two craters on the occasions of the various eruptions are quoted from the accounts of eye-witnesses and reproductions are given of the original drawings and maps. John Ledyard, one of Captain Cook's party, made the first known attempt to ascend Mauna Loa in 1779, and his journal is extensively quoted. Photographs of the later eruptions as far back as 1877 give an added interest to this valuable work. Dr. Hitchcock is a professor in Dartmouth College, and one of the charter members both of the Appalachian Mountain Club of Boston and of the Trail and Travel Club of Hawaii. M. R. P.

"THE MOUNTAIN THAT WAS GOD."† No one who is at all interested in Mt. Rainier should fail to obtain a copy of this book, received too late for review. The splendid illustrations alone make it an invaluable possession to anyone who has ever seen, or who hopes to see, this most glorious mountain of the Northwest. M. R. P.

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* *Hawaii and Its Volcanoes.* By CHARLES H. HITCHCOCK. The Hawaiian Gazette Company, Ltd., Honolulu, 1909. 316 pages, profusely illustrated. Price, $2.00.

† *The Mountain That Was God.* By JOHN H. WILLIAMS, Tacoma, Washington. Price, postpaid: boards, $1.12; paper, 57 cents.

PUBLICATIONS OF THE SIERRA CLUB

No. 1.—Articles of Association, By-Laws, and List of Members.

Nos. 4 and 5.—Maps of Portions of the Sierra Nevada adjacent to the Yosemite and to King's River, 1893.

No. 8.—Table of Elevations within the Pacific Coast, 1895, by Mark B. Kerr and R. H. Chapman.

No. 12.—Map of the Sierra Region, May, 1896.

Nos. 2, 3, 6, 7, 9, 10, 11, 13, together forming Volume I., Nos. 1-8, of the SIERRA CLUB BULLETIN.

Contents of Volume I.—Ascent of Mt. Le Conte; Address on Sierra Forest Reservation; California Outing; Crater Lake, Oregon; Diamond Hitch; Explorations North of Tuolumne River; Forest Reservations; From Fresno to Mt. Whitney, via Roaring River; From Gentry's to El Capitan and Yosemite Falls; Grand Cañon of the Tuolumne; Head-Waters of King's River; Kern and King's River Divide; King's River and Mt. Whitney Trails; Knapsack Tours in the Sierra; Mt. Bernard; Mt. Tahoma; Mt. Whitney Trail; New Grove of Sequoia Gigantea; Notes on the Pine Ridge Trail; Route up Mt. Williamson; Search for a Route from the Yosemite to the King's River Cañon; Sources of the San Joaquin; Three Days with Mt. King; Through Death Valley; Through the Tuolumne Cañon; Tramp to Mt. Lyell; Upper Sacramento in October; Notes, Correspondence, and Reports.

Nos. 14, 15, 16, 17, 18, and 19, together forming Volume II., Nos. 1-6, of the SIERRA CLUB BULLETIN.

Contents of Volume II.—Ascent of the White Mountains of New Mexico; Basin of the South Fork of the San Joaquin River; Conifers of the Pacific Slope, Parts I and II; Day with Mt. Tacoma; Early Summer Excursion to the Tuolumne Cañon and Mt. Lyell; Expedition of Prince Luigi Amedeo of Savoy to Mt. St. Elias; Explorations of the East Creek Amphitheater, from Mt. Rose to Mt. Shasta and Lower Buttes; Kaweah Group; Lava Region of Northern California; Mountain Trips: What to Take and How to Take It; Neglected Region of the Sierra; Observations on the Denudation of Vegetation—Suggested Remedy for California; On Mt. Lefroy August 3, 1896; On Mt. Lefroy August 3, 1897; Philip Stanley Abbot; Taking of Mt. Balfour; To Tehipite Valley from the King's River Grand Cañon; Up and Down Bubb's Creek; Wanderings in the High Sierra Between Mt. King and Mt. Williamson,—Parts I and II; Woman's Trip Through the Tuolumne Cañon; Yosemite Discovery; Notes, Correspondence, and Reports.

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No. 21.—Ramblings Through the High Sierra. Same as No. 20. (Specially bound; without Editorial Notes, etc.)

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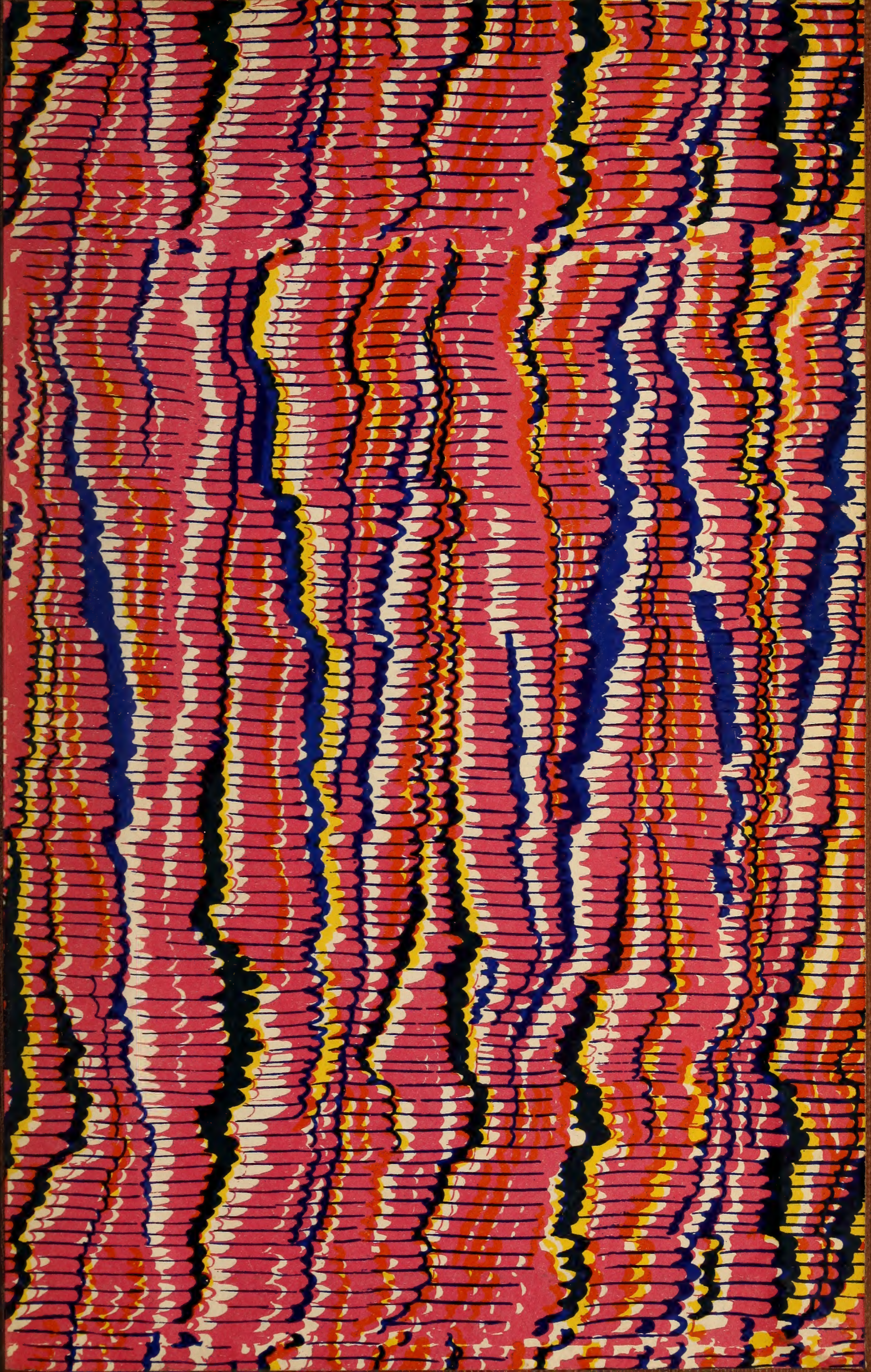

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